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A JOURNAL DEVOTED
 TO BEES,
 AND HONEY,
 AND HOME
 INTERESTS

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No. 12.



MAY 26, first white-clover blossom in this locality.

FOR CUTS AND BRUISES, propolis is recommended as an efficient healing plaster in *Praktischer Wegweiser*. Why not? And what will stay better in place if you get the really sticky kind?

RAMBLER thinks (p. 432) that we have more trouble with bogus honey than other nations. If you could watch the German papers, friend Rambler, you'd think they have troubles too, just as bad as ours.

ONE GOOD RESULT of the hard winter in this region, according to general belief, is the destruction of potato-bugs. Last year they were promptly on hand waiting for the potatoes to come up; and now with potatoes a foot high not a bug is to be seen.

G. RUMLER insists in *Bienen-Vater* that cold is the cause of diarrhea; that confinement alone will not produce it, because bees do not wait for a flight to discharge their feces, but normally discharge them in a dry state in the hive. It may be remembered that S. Corneil contended for the same view.

STENOG says the ear detects the difference between *passed* and *past*. Then the ear detects what ought not to exist, for the dictionary gives the same pronunciation for each. Answering your questions, Stenog, *past* is shorter than *passé*; and if I had control I'd write *loct* for *locked*. [Does emphasis of voice never cut any figure, where cold print shows none?—ST.]

SOMETIMES bees are slow to take a syrup of pure sugar and water, but will greedily accept it with a small part of honey. In the absence of this, *Le Rucher Belge* advises flavoring the sugar syrup with a few drops of essence of cinnamon, anise, vanilla, or orange flowers. [I never saw the time in our apiary when the bees were slow to take up good pure sugar syrup; but strongly flavored honey, like basswood, for instance, is more apt to call out and start robbing than sugar syrup.—ED.]

J. C. DAVIS says in *American Bee Journal*, "A man living $1\frac{1}{2}$ miles from me came yesterday to get me to put 20 colonies or more in his 80-acre apple-orchard for ten days, to fertilize the bloom. He offered 15 cents a colony. I took 10 colonies, but do not like to risk moving many now while they are gaining so fast here." Fruit-growers are learning to recognize their friends.

A FRENCH MEDICAL JOURNAL is quoted in *Revue Internationale* as saying that honey with bread and butter replaces perfectly cod-liver oil. As carbon is the desideratum, it looks reasonable that honey may answer as a substitute without the disadvantage of turning the inside mechanism upside down. [I wish I could believe there is a good deal in this, and hope there is.—ED.]

HAS RAMBLER been smitten with that dark-skinned maiden, that he dislikes to hear her called "squaw," while he has no compunctions about calling her father an Indian?—p. 433. Is a "squaw" any thing more or less than a female Indian? But I confess that, when he speaks of "the lovely Indian maiden," I think of something a good deal nicer than a squaw. Something wrong with both of us as to our intellectual machinery, Rambler.

"CELL-RAISING has been going on along during this spell of cool weather. The Souths have been having for the last few days, apparently, without let or hindrance, page 437. Now tell us, what the queens are just as ANINGS will early dearer weather. [I am in favor of giving the are not quite so long a test in America. The were built when was altogether dependent on other issue I hope, orsata itself. "Barkis is —ED.] side, sure. As will be seen

STENOG made use when Mr. Rambo tried to dazzle in the benefits of "assimilative civilization from the time when he learned

Mr. H. E. Hill, has forsaken the As I happen the editorial tripod, and his ad-Prohibition in the future, Stuart, Fla. He entirely consider active life among the bees, I can form no have exchanged the cushioned telligent a man; conveniences for the open air ment. The of and tropical country." He does efficiently recover his journal any less atten-

tion than formerly, but believes he can add to its usefulness by the practical work in which he is about to engage. He may extend his travels to Cuba, taking his camera with him. Mr. Hill's work will be observed with interest.

Mr. Hill has had an invitation to visit Dr. Viete, of Cienfuegos, Cuba. Dr. V. harvested 180 tons of honey in one season.

Our Symposium.

LARGE HIVES.

Egg-laying Capacity of Queens; Large Hives Practically Non-swarming; the Proof of the Pudding is in the Eating.

BY CHAS. DADANT.

Yes, I made a mistake in figuring the number of cells in a Gallup comb. I hope that my readers will excuse it by remembering that, when we get old, our faculties decrease in proportion with the age. But this mistake does not annul my arguments. A hive with 9 Gallup combs, i. e., with 57,294 cells, to receive the eggs of the queen, or, rather, with 51,000 cells for bees, needs at least one comb to receive the food, honey, and pollen; has room for but 2400 eggs per day, while a good queen can lay more than 3000 eggs daily.

To ascertain how many eggs a good queen is able to lay, I did not confine my observations to the number she can lay in one minute, but I computed the number of square inches occupied with brood at the same time, in several good colonies; and in multiplying this number by 55 I found about from 70,000 to 80,000 having eggs or brood. This number, divided by 21, the number of days a cell is occupied, gave me from 3300 to 3800 per day. Of course, such experiments can not be made with the nine-frame Gallup hive.

"But," says Mr. Doolittle, "if a queen lays 6 eggs in a minute, 360 in one hour, 3600 in 10 hours, why does she not lay 8640 in 24 hours, and 181,440 in 21 days?"

I wonder why Mr. Doolittle asks me such a question. Does he ignore the fact that no animal can work 24 hours without rest? He does not ignore the fact that the queen is nursed by the workers, which, when she approaches them, turn their heads toward her, as is shown on the first page of the Langstroth book, and that the bees in front stretch out their tongues to offer her some food. Of course, during winter and during cold days the queen is about motionless. She begins to move in winter as soon as the weather is warmer; then the workers offer but little food, for their stomachs are about empty; but as soon as they can fly a little outside, the number of those that meet the queen increases. She eats more, begins to lay, and her laying capacity increases in proportion to the gathering of honey and pollen, and to the increasing number of bees working outside, which do not work 24 hours daily.

Then Mr. Doolittle says, "Bro. Dadant gives an instance where a colony in a large hive gave him 160 lbs. of comb honey which he sold at 27 cents a pound, the result of which would be \$43.20. In back volumes of the bee-papers can be found my report of a colony that gave me 309 lbs. of section honey, and plenty in the hive for winter." I can answer that this quotation of mine was not made to show the largest crop we had obtained from a single hive, but to show that this colony, in a large hive, strong in bees in March, gave me better results than the smaller ones could give. In narrating my purchase of this large hive my object was to show that I had not made a mistake in buying it for \$7.00 while the small ones were sold for \$3.00 or \$4.00. I may add that we have never, except in this case, weighed the crop of our bees; as, in good years, we harvest our honey several times in summer, we do not take the trouble to note the quantity given by every colony as Mr. Doolittle does.

Our crop of honey from each colony can not equal the crop of Mr. Doolittle, for we have only white clover, and occasionally fall flowers, while he has a quantity of lindens around his apiary.

Our large hives do not give us as much work in summer as the Gallup hive, for we have very few swarms. Our home apiary, numbering 80 colonies, did not give us ten natural swarms in three years; while I see in the *Progressive Bee-keeper* for January, 1898, p. 20, that Mr. Doolittle had 548 natural swarms in the same spring, from 49 colonies.

In our Langstroth Revised, page 237, we give a letter from a bee-keeper in Indiana, who, in 1883, had 505 swarms from 165 colonies. We reproduced this letter because we thought that such a rate, of three natural swarms per colony, could not be surpassed; but Mr. Doolittle, with his 7 natural swarms from each of his 49 colonies, as well as in the production of honey, can not be equaled by any bee-keeper.

Mr. Doolittle says that "the proof of the pudding is in the eating." But a struggle for superiority between two cooks can be solved only by the eaters. My readers saw in GLEANINGS for May 1, page 344, the offer of Mr. Draper in favor of the large hive. Besides, in the *Amer. Bee Journal*, May 11, page 292, Mr. W. H. Eagerty, of Kansas, writes: "From actual use of both large and small hives I will take the large one every time."

If Mr. Doolittle thinks that these opinions are not sufficient I will give that of another bee-keeper, who says, in the *Progressive Bee-keeper* for November, 1897, page 296, "In July, 1877, I had a colony in an especially long hive constructed for an experiment, containing 32 frames which had, as nearly as estimation could get at it, 99,500 bees. This colony gave 566 lbs. of surplus honey that season." Signed: G. M. Doolittle.

I do not think that I have any thing to add to such a quotation.

Hamilton, Ill., May 15.

[Shortly after the receipt of the foregoing there came an article from A. N. Draper. As

this is in line with some of the arguments put forth by Mr. Dadant, we give it right here.—Ed.]

DRAPER'S BARN.

Large Hives for Wintering.

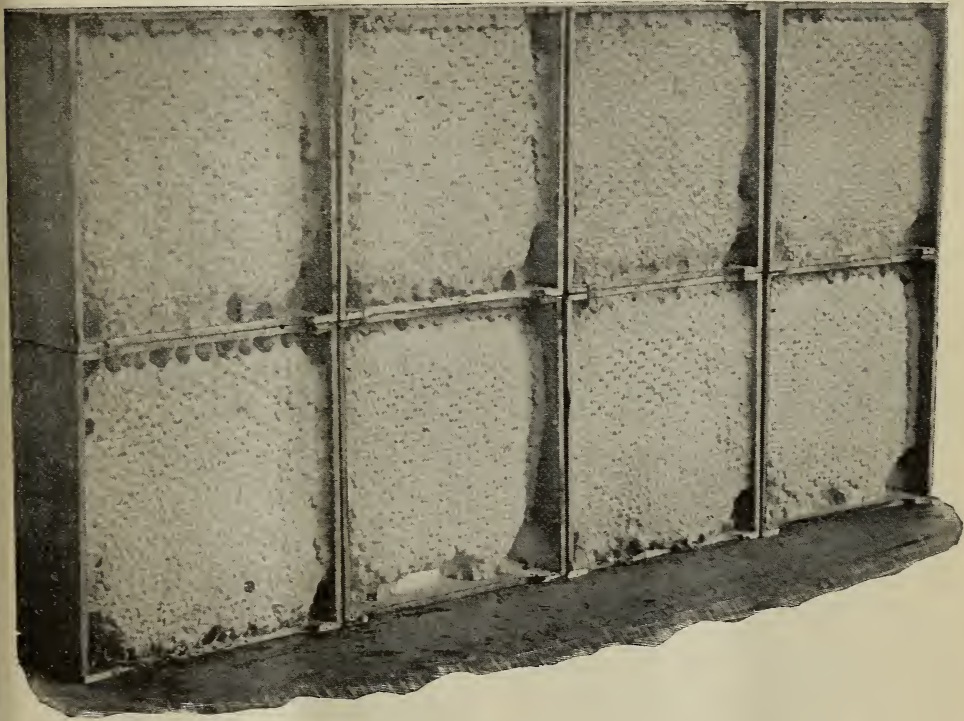
BY A. N. DRAPER.

Who ever before heard of a man wanting to carry his "barns" into his cellar? I never did. Please do not try it, Dr. Miller. I'll tell you a good deal better way, and, also, why it is better. The proper place for those barns is

joined together in a way that rendered the frames immovable. In the fall we extracted from the brood-chamber of nearly every colony, as was then our practice, leaving only seven Quinby frames on an average for winter. The colonies that had crooked combs were left with all of their stores—ten frames (take notice, Quinby frames), because we could not disturb them without breaking combs and causing leakage and robbing, and it was not the proper season to transfer them. These colonies did not have to be fed the following spring, became very strong, and yielded the largest crop. This untried-for result caused us to make further experiments, which proved that *there is a profit in leaving, to strong colonies, a large quantity of honey, so that they will not limit their spring breeding.*

Page 333:

If the colonies are to be wintered in the open air they should all be made populous, and rich in stores,



SEPARATOR AND NON-SEPARATOR HONEY. SEE EDITORIALS.

on their permanent summer stands, with a regular winter-case around them. As it is necessary for the barn to be warm and well packed for February, March, April, and May, to secure the best results this packing should be done in November, when it is convenient to get the leaves for packing. If properly prepared for spring there is no trouble about their wintering, as your barn has from 40 to 60 lbs. of honey, a good vigorous queen, and a populous colony of bees in it. I quote from Dadant's Langstroth Revised, p. 328, Art. 625:

Some 18 years ago, in an apiary away from home, where we were raising comb honey, we had a number of swarms, which, in the rush of the honey crop, we did not examine until their combs were built. At that time the triangular bar was the guide principally used, and the combs of some of these swarms were

even if to do so requires their number to be reduced one-half or more.

Art. 632:

Small colonies consume, proportionally, much more food than large ones, and then perish from inability to maintain sufficient heat. Bees in small or contracted hives, etc., have too scanty a population for successful wintering, especially out of doors; for as it is by eating that bees generate warmth, the abdomens of a small number are soon filled with residues; and if cold continues for weeks the bees get the diarrhea. We have often seen colonies in small hives perishing side by side with large ones whose bees were very healthy. Such facts abound, and we have but to open the bee-journals to find confirmation of our statement.

Page 334:

In the *Amer. Bee Journal* for February 8, 1888, page 88, Mr. J. P. Stone, of Holly, Mich., asks why a colony, which was hived in 1889 in a large box, is prosper-

ing yet, while others have perished. The size given, 16x16x22, which shows that the box has twice the capacity of an eight-frame Langstroth hive, answers his question.

In the following number of the same journal, page 107, Mr. Heddon mentions a colony which had wintered safely for seven years in a box ten times larger than the Langstroth, while many others died by its side. The colony, when transferred, contained about double the number of bees usually raised from one queen.

Page 338 :

Mr. E. T. Sturtevant, of East Cleveland, Ohio, widely known as an experienced apiarist, thus gives his experience in wintering bees in the open air :

"No extremity of cold that we ever have in this climate will injure bees if their breath is allowed to pass off, so that they are dry. I never lost a good colony that was dry, and had plenty of honey."

This is no fad. Twenty-five years ago the editor of GLEANINGS recognized the necessity of a warm hive in early springtime; see GLEANINGS, 1874, page 38.

That a few inches of chaff, straw, or old clothing, around a hive is no positive protection, we think is generally admitted.

From the March number, 1874, page 30, we quote :

Feb. 16.—We have just purchased two loads of coarse fermented manure at the livery-stables.

On page 38 we quote :

From what experience we have had, we should feel safe to risk the bees under half a wagon-load to each hive.

March 2, page 40: "

We are so pleased with the manure protection that we have put our fifty hives on their summer stands, and are making manure-heaps over them as fast as possible.

I suppose he found later there was too much moisture, and perhaps abnormal heat was not just the thing. But, to return to Dadant, page 340 :

To show the advantages derived by the bees from a winter flight we will give our experience during one of the coldest winters—that of 1872-'3. From the beginning of December to the middle of January the weather was cold, and the bees were unable to leave the hive. The 16th of January was a rather pleasant day. We took occasion of this to examine our weak colonies, being anxious in regard to their condition. To our astonishment they were found alive, and our disturbing them caused them to fly and discharge their excrement. Being convinced that all of our bees were safe we did not disturb the strong colonies, and a few of the latter remained quiet. The next day the cold weather returned, and lasted three weeks longer. Then we discovered that the weak colonies, that had had a cleansing flight, were alive and well, while the strong ones, which had remained confined, were either dead or in bad condition.

I have made a practice, for a number of years, of taking off the outside packing-case containing the leaves when the warm days would come after the bees were confined for some time by cold weather, and turning the winter-case, containing the leaves, upside down so that the sun and air would warm them up as well as to give the bees a cleansing flight. Now, then, those leaves get warmed up through and through, and the case is returned to its place before it gets too cool in the evening. With a good strong colony of bees in the "barn," is it not plain to you that the leaves will keep the barn warm, as well as the bees and all of the honey? The leaves, after getting warmed up, will hold the heat that the bees generate, and sunning and airing both the leaves and hive seems to start the bees to rearing brood with a rush.

To sum up the whole thing in a few words : Other things being equal, with a large hive there is no need of feeders, no need of cleaning bottom-boards in the spring, no need of spreading brood, no fear of their starving in the spring, no use of lugging them in and out of a cellar for winter; and whenever there comes a honey-flow they are ready for it every time.

Upper Alton, Ill., May 24.

[Now comes an article from the "other side." Just read.—Ed.]

SMALL HIVES FOR COMB HONEY, AND WHY.

A Strong Article.

BY D. N. RITCHEY.

As there has been much said in favor of large hives of late by Mr. C. P. Dadant and a few others, I want to say that nine out of ten beginners who would follow Mr. Dadant's advice would fail, and lose all they had put into the business, and give up in disgust. I wish to say all that I do with all kindness for Mr. Dadant. In the first place, Mr. Dadant can not give a fair statement, because he says, Sept. 15, 1898, page 683, that he has never tried the small hives—at least not less than ten-frame, which is not a small hive for this climate, by any means; so how can he judge? I want to be as brief as I can with this article, as I believe all articles should be, and then readers of GLEANINGS would be glad to see them—at least that is my idea. What I tell you in my argument are facts that I have gathered from 32 years' experience, many experiments, and an outlay of several hundred dollars, and an experimental knowledge of the bee-business.

I have no doubt Mr. Dadant has produced large yields of honey with his large hives; but I believe he could have done better with smaller ones. I will admit there are a few localities where a large hive would give better results in extracted but not in comb honey. We must remember that the most of our large comb-honey producers use small hives. I have this day examined some of my bees, and find that the bees in six-frame hives are storing honey in sections while my nine-frame hives have not an ounce in the supers; and if it were not that I have a field of buckwheat almost in full bloom I should have to feed my colonies that are in large hives, to keep up brood-rearing so I could have a large force ready for white clover.

I write these articles with the express purpose that others may not have to pay out the amount of money that I have, and spend the time I have, to learn what they must if successful in the bee-business. In my next article I will give the proper size of hive for this climate, and give good reasons for it.

Mr. Dadant, Sr., says on page 258, Apr. 1, that a queen does not lay at will. I am not "Baptist" enough to swallow that.

Before I close this article I should like to give Mr. Dadant, as advocate of large hives,

and Dr. Miller and others who are on the fence, a problem I solved long ago: Take two colonies of bees and give them a good queen and 30,000 workers each, in two small hives, and take one colony, good queen, and 75,000 workers, in a large hive, and see which will produce more comb honey in ten years. We must remember the keeping of bees from the standpoint of dollars and cents.

Granville, Ohio, April 22.

[There is just one point in this discussion that I wish to refer to; namely, that you say Mr. Dadant can not give a fair estimate because he admits he has never tried the small hives—never any smaller than ten-frame. Perhaps there is something in this; and on the other hand are you not committing the same error in making a comparison between your six and nine frame hives, with the difference in favor of the six? Mr. Dadant will now have a right to say that *you* never tried a *large* hive, and that, therefore, you can not make a "fair statement." In making these comparisons we should make a sharp distinction between a ten-frame Quinby as the representative of a large hive, and an eight-frame Langstroth as the representative of a small one. It is true there are hives or brood-chambers as shallow as the Heddon, but they are generally used in pairs, so that, after all, a hive of the eight-frame Langstroth capacity may be considered a small one.

The following letter is a private one; but I obtained permission of Mr. Poppleton to give it to the bee-keeping world, as it contains much matter of interest, especially in this direction.—Ed.]

THE LONG-IDEA HIVE.

One Brood-nest Holding 24 Large Frames; a Hive for Extracting, and a Hive for Comb Honey.

BY O. O. POPPLETON.

I have been much interested in all that has been published for a year or two past on the large-hive question. My own ideas and practice are in line with nearly all of Mr. Dadant's ideas. I am glad to see that you are going to test the larger frame and hive; but, while about it, why not also test the large frame in a single story—that is, a few of them, that will take, say, 24 combs each? The frames I use are 12 in. square inside; but if I were to start over again all new, I would keep the same depth, but lengthen the frames two inches, which is about half way between my frame and the one you are going to test.

In your editorial on p. 345, you say, "While I believe in large colonies I do not see how it makes any difference whether they are in one or two brood-chambers; but perhaps it does." "The proof of the pudding is in the eating thereof," not in the theory about how it should be made.

Bee-paralysis was an important factor those two years. My own personal experience of 30 years in bee-keeping, two of them in Cuba, with 400 to 500 colonies in tiered-up hives, has fully convinced me that, for some reason or

other, large colonies in single brood-chambers *do* give better results, even if we can't see the reason. There are objections, of course, to the single-brood-chamber hive, but they do give better results, so far as extracted honey is concerned, at least.

The hive first devised by Mr. Langstroth, nearly 50 years ago, has not been improved on so far as shape and proportions of frames are concerned, for the production of comb honey; but the production of extracted honey is so different from that of comb honey that it is doubtful if the same style of hive and frame can be the best for both.

This letter isn't written to call your attention in the least to any of my own methods, but to encourage you to make full experiments in the new frames, and methods of using them; and don't reach any conclusions, as Mr. Doolittle did, after the use of only two hives for a season or two. Conclusions formed after such a limited test are practically worthless.

Stuart, Fla., May 27.

[When Mr. Poppleton called on us two years ago we talked over this matter considerably, at which time he voiced substantially the sentiment expressed in the letter above. I could not see *why* a Langstroth frame would not be equally well adapted for both extracted and comb; but, as he says, it is not a matter of *seeing*—it is a matter of the *proof of the pudding*.

One thing seems to be very clear—that is, if our orders are any criterion to go by: The ten and twelve frame Langstroth is gaining favor among the extracted-honey men of the South, and the eight-frame size is preferred by most of the comb-honey producers in the North. Of course, there are a good many exceptions to both. Some comb-honey producers will have nothing less than a ten-frame hive, and some extracted-honey men prefer two small brood-chambers, frames of Heddon depth.

After all, the proposition simmers itself down to this: Can we make *more dollars* in our locality with a large hive than with a small one? This same proposition may be varied somewhat this way: Is the Langstroth hive, eight-frame size, is the proper thing for comb-honey production, is the large hive with large frames the best suited for the production of extracted? Here are two propositions that will bear discussion. From the amount of correspondence and inquiry already in it, would look as if a large portion of our readers, at least, still consider this old subject a live one yet. Indeed, quite a few are ordering "Drapper Barns" to test alongside of the standard eight-frame Langstroth hives.—Ed.]

THE BARBER PLAN OF FORCING BEES INTO SECTIONS, AGAIN.

The Way it Works, and the Quality of the Honey.

BY MRS. A. J. BARBER.

I don't know whether it's the proper thing for a little bee-keeper, and a woman too, to talk back to so big a man as our Dr. Miller;

but I should just like to say, in reply to his comment (page 342) upon my method of getting bees started in sections, that I have tried bait sections, and find that usually the bees will fill them and leave the others untouched.

Now, what I am going to say will probably be considered a heresy; but it is a fact that I prefer the small combs *because the queen will lay in them*. When a super of combs is put upon a good hive of bees they will rush the honey from the brood-nest into the small combs. Usually the queen, after filling the empty cells below, will get into the super of combs when it is almost full of honey. She does not have room for much brood, but we generally find a few patches of eggs and larvæ when we raise the super to put in sections. We smoke the super well so that the queen goes down before raising it, and she does not trouble it any more, as the sections are between her and the super, and she won't go through them.

I used to think that brood above my sections would ruin them, but I know better now. I suppose if we left the queen in the super, or if the super were full of brood, the quality of the section honey might be impaired.

All of my honey last year was produced by that method. Just after I had put a lot upon the market last fall in Durango there was a grand fair or exhibition of the products of Southwestern Colorado, Northern New Mexico, and Eastern Utah. The man who handled my honey, wishing to add to the display, entered a lot of cases of my honey, and got the second premium. The honey was an average market lot, and I did not know that it was on exhibition until notified of my premium. I mention this to prove that the quality was good. We have a fair demand for extracted honey, and wax and vinegar; and, considering the cost of putting into packages for market, it pays better than comb honey, especially when we can get several hundred pounds extra while coaxing the bees to work in sections. With the present low prices we have to consider every thing, and find the big products of extracted honey (wax and vinegar) go a long way toward paying for the cans to put up the crop.

Mancos, Colo., May 13.

[I am becoming more and more convinced that this is the way to produce comb honey. The ordinary method of putting a super of sections on to the hive direct often results in loss of time—two or three days, and possibly a week. The bees apparently do not quite like the upstairs arrangement, and, as a consequence, fritter away for several days, trying to decide what to do. Valuable time as well as honey is lost. By putting the shallow extracting-super right on the hive in the first place—that is, at the *beginning* of the honey-flow—we get the bees into the upstairs fever. After they get well agoing in the shallow combs, lift them up and put a comb-honey super under them, and, presto! what a rush there will be for the sections! I have tried it myself just enough to know that there is no jugglery about it; but that, in our locality at

least, good results may be secured; but because I thought I was almost alone in the matter I did not say so much about it. Of course, after the bees once get to work in the sections it is not necessary further to put on extracting combs.

The Barber method seems to be so practical that I have incorporated it in the new edition of our A B C of Bee Culture.

Hello! here is another subscriber who knows that the plan is not all theory. Just read what he says.—ED]

PRODUCING BOTH COMB AND EXTRACTED AT THE SAME TIME.

By his Straw in GLEANINGS, p. 386, I am glad to see Dr. Miller has done some figuring. He is almost persuaded, and with a little actual experience he will become fully so. The first three years in bee-keeping I produced comb honey exclusively, extracting only from the unfinished sections. Last year being poor in promise, I put up eleven supers of extracting-frames filled with extra-light brood foundation, wired, for ten-frame hives. From these eleven supers I extracted 316 lbs. of honey which I sold at from 13 to 15 cts. net, according to package—four-quart granite pails containing 10 lbs., \$1.45; two-quart, 5 lbs., 75 cts.; 1-qt. fruit-jars, 3 lbs., 50 cts., and 1-lb. bottles with labels, 20 cts., all in the home market, and to friends in adjacent towns. Had my crop been multiplied by 5 I should still have run short. In November it candied, and I gave a jar to a poor German shoemaker, who declared with many strong expressions it was the first honey (bee's honey) he had seen in this country. His wife took all I had, and wanted more for her friends. She sold it at 60 cts. per 3-lb. jar.

I had no idea there was so much filth in good clean comb honey until I melted down 14 sections and found the wax full of propolis and impurity. By the way, 14 Danzy sections gave me just 3 oz. of wax, 11 lbs. of honey, and $\frac{1}{4}$ oz. refuse. My average of comb and extracted per colony last year was 43 lbs. I had 11 swarms, only one from a ten-frame hive. After cutting out queen-cells and placing the old hive in a new location, I gave them a super with extracting (5-inch-deep) frames. They were handsomely filled and capped, and gave me 25 lbs. of extracted honey. The other old colonies stored but four or five pounds in sections.

B. F. ONDERDONK.

Mountain View, N. J., May 23.

THE SOMERFORD METHOD OF FORMING NUCLEI.

How to Examine a Young Queen in a Queen-cell; a Suggestion to Fred L. Craycraft; Foul Brood in Cuba; How did it Originate?

BY W. W. SOMERFORD.

Dr. Miller:—I see in one of your Straws for April 15, that you always supposed that your queens were the best reared as I describe in an article on expansion, page 160, April 1st GLEANINGS. I will say that I adopted the

plan of increasing and queen-rearing, previously described, eight years ago, in Cuba, while handling 400 and 500 colonies in one apiary where foul brood was plentiful, and I got fine queens, and have used the plan ever since; and for fine queens I think I get the best that can be had, for the labor given, if not the best ones that can be had with more elaborate manipulation. Any way they give entire satisfaction, and have for years. They seem to me to be as good as queens reared by the Doolittle plan, except at times just after a honey-flow. Then I have to do considerable culling in order to get large ones that will *mate quickly*; and *quick mating* I believe to be the *best evidence* in regard to the quality of a queen. If she begins laying very young I know I've got a good queen, without even seeing her.

By the way, while on the queen subject, I will mention a plan adopted while handling hundreds of foul-brood colonies; that is, to make a cut across the base of each queen-cell with the little blade of a sharp cell-knife, cutting across the cell; and while the knife is in the cut I tip the blade enough to open the incision sufficiently to take a good peep at the royal inmate, to ascertain whether or not she is all right as to size and shape, and stage of development as well, before inserting her in the hive that she is to be the future mother of. By thus doing you will often save the expense of having to hunt up a worthless queen that has failed to begin laying at the proper age.

As to closing up the cut, or peep-hole, you have made in the cell, that is easily done. Mash the cut nicely together, then seal with a hot smoker. The bottom seam of the fire-box is best. With it, one delicate touch or two will do the job up so nicely that the bees never bother the scar on the cell.

The plan above is essential in handling cells reared in foul-brood apiaries, for at least half of them are only empty coffins with decayed bodies in them, instead of live queens. Dr. Miller, the race of bees has possibly more to do with "nine-tenths of them returning to the old hive" than location does, possibly. I have received comments on my expansion article, from Waco, Texas, to Oregon, and from Oregon to Pennsylvania, and a good many of the writers seem to be delighted with the expansion letter on page 160, above referred to, and say it is the best that they have ever seen on forming nuclei. One bee-keeper is obliging enough to send me his plan of forming nuclei, with drawings to illustrate; but boiled down it is simply this (and it may prove valuable to many): Arrange your *empty hives* around the colony to be formed into nuclei, in a circle (horseshoe-like entrances to the inside); then divide the parent colony into the seven or eight hives standing in the horseshoe circle. Divide equally if possible, then move the old hive clear away, and the bees, says the writer, will keep about equally divided; and if too many should get into one hive, trade places with the weakest one, and continue swapping enough to keep them about even in bees for a week or so.

As to queens for his plan, he says you can use any method you prefer for your cells. I

would give the writer's name, but I gave his letter to one of my bee-boys, and it is now out of pocket, to my regret.

I am glad to see that Rambler, No. 165, has stumbled on to *another remedy* for foul brood, and hope it will prove very valuable; and as you ask for some one in position to try the plan, I can name the young man, and he is one of *ability too*; and, besides, he is no other than our friend Mr. Fred Craycraft; and for his sweetheart's sake I am sure he will do his best to make the plan a success, as her papa's bees are in a terrible condition, *all* being rotten with foul brood. Now, Fred, I know you will excuse me for the joke; but as the old gentleman has only 30 hives, and they in almost a garden of Eden, when it comes to beauty, shade, and a variety of vegetation, just think of 31 rows of sugar-cane containing 31 distinct varieties. Such a *lovely* place to try an experiment! and such delightful surroundings that I am sure Mr. Craycraft could cure all thirty of those infected colonies, and thus demonstrate the real value of the Rambler's foul-brood remedy.

I see from Mr. Stachelhausen's note, page 315, that it is very probable that Mr. Pedro Casanova was mistaken in saying foul brood came through Mr. Jones, from Canada. He says Dr. Dzierzon, in 1848, infected his apiary with the disease by feeding Cuban honey. It is very probable he is correct, as foul brood now is thoroughly scattered over Havana Province. I have known over a thousand colonies to die of it in that Province in the last ten years, and on my last trip I saw more than one apiary so badly affected as to be worthless when it came to storing honey.

As to curing the disease in Cuba, I will tell soon what I know about it.

Navasota, Tex., Apr. 24.

EXPERIENCE IN WINTERING.

BY HARRY LATHROP.

The past winter has been one to test our methods of wintering bees quite severely. My loss is about 12½ per cent, including some that were wintered outside with no protection except dry packing on top. These were in two story Dovetailed hives with plenty of sealed stores in the upper story, front end of hive raised up from bottom-board one inch by inserting little blocks so as to leave a deep entrance in front, a long V-shaped opening on each side, and bottom sloping so as to carry off water.

There was so much said last year by Dr. Gallup and others about wintering in cold climates, with no protection, by having large free entrances, that I was induced to try six colonies that way. Three of them lived through and are in good condition; the other three are stone dead, with no lack of honey.

I find it is necessary to remove the covers from Dovetailed hives while in the cellar, and substitute quilts, even with a deep space under the frames, and a large entrance; otherwise moisture will accumulate in the hive. While

Langstroth hives winter all right with honey-boards sealed down, I think the reason is because the Dovetailed-hive covers are painted two or more coats, which renders them non-porous, while the Langstroth honey-boards are not painted. The experience of the past has taught me that it is bad practice to put into winter quarters any weak colonies or those not having the proper amount of stores, as they are most sure to die after using up what honey they have and leave the combs in a miserable condition, if not entirely ruined. I think it is best to unite such colonies to others, or destroy them, and put the clean combs away in a safe dry place, and in the spring they will be found in the same condition as when put away. If I had not tried the past season to winter a number of such light colonies my percentage of loss would not have been over half what it was, and I should have avoided a lot of nasty work in cleaning up combs and hives.

Now that the bees are on their summer stands I am reminded that I do not like the Dovetailed-hive covers for the spring period. They do not make the hive tight and warm, and there is no chance to use a cushion or quilt under them. I have been thinking of making some sort of rim, with a lap joint, to place on the brood chamber. You will say, "Place an empty super on." Yes, but that does not make a tight water proof joint. With a deep cover having a lap joint, two sheets of newspaper can be laid on the brood-chamber and the cover crowded down over them, making every thing tight and warm. If newspapers or quilts are used under the flat covers it leaves no bee-space above the frames; and the quilt or paper will absorb moisture from the outside, and become wet and cold. I should like to know how others manage this during the cool weather of spring.

Browntown, Wis., April 21.

[Dr. Mason always winters his bees in the cellar with a cushion on top, and he brings them through the winter successfully every winter, if I mistake not. Yet the majority use and recommend sealed covers—painted covers at that. We do not winter enough in the cellar to form a correct opinion on the matter.—Ed.]

APIS DORSATA.

Caught, and Gone Again; the Giant Bees not Willing to be Confined to Hives; their General Appearance much like that of Italians, only Larger.

BY W. E. RAMBO.

I am sending you to-day by express a bottle of *Apis dorsata* in alcohol. I believe you will find both drones and workers, but no queen. I have done my utmost to get you a queen, spending the best part of two nights up in trees for that purpose. I wrote of catching one swarm. The queen did not appear to be in the bunch I got, although a fine lot. If she had, I have hopes that all that could have been accomplished in any way would have

been done with that swarm, for there was brood that hatched out several hundred healthy bees; but having no queen, and coming out too late to make one, they all dwindled and perished.

One week later I found another colony, hived them, getting all; but the next day they left the hive and brood-comb, and settled in the roof of the building, apparently as if to build a comb. I watched the result; and one morning about two days later they had absconded. Before hiving them I tried my utmost to find the queen. But the bees were several thick, and she was not to be seen. So I am nowhere in particular. I know of two more swarms, but I fear I shall not just now be able to inspect them. May 1 I go to the mountains for a month, and have hopes of reaching something definite there.

I have read the letter in Mar. 15th GLEANINGS from Mr. John C. Uglow. If I have *Apis dorsata* he has something else, judging from his description. I have not seen an Italian for a long time; but from what I remember I should say the *Apis dorsata* worker is as much like an Italian as possible. It may be somewhat larger; but it is not black, glittering, iridescent, nor wasp-like. I think if some of our queen-breeders were to find an *Apis dorsata* worker crawling in among your hive bees, you would catch it up and send it off with the next order on your file for a fine three or five banded queen. That is my impression as I sit with a brood-comb on my table, with the remnant of my catch forlornly crawling about it.

The bees act very much like Italians. I do not think them more fierce. Of course, they will fight if fought. But they would not be much if they did not. I have now no more time. Please send several queen-cages. None were in my outfit.

Damoh, India.

[There is no question but, from your description, you have found the genuine *Apis dorsata*. Those that I have seen in alcohol tally almost exactly with what you say of them. In fact, if we could have typical three-banded queens, a whole colony of them, we should have, as you say, what would look very much like Italians.

Indications so far seem to point to the probable fact that *Apis dorsata* can not be successfully domesticated. If this should prove true, it would render a government expedition after them almost a fruitless venture. Even if the bees are once secured and brought to this country, what can we do with them if they have the wilds of the forests in the South? I can not think they would do any harm, even then, and might possibly be worth something, even if they were forty feet in the air, on an overhanging limb.

From all accounts that have so far been rendered, it appears that the giant bees are very gentle, and easily handled—as much so as Italians; and the fact that Mr. Rambo, almost an inexperienced bee-keeper, has been able to do with them what he has, shows they can not be so very vicious.

We are sending Mr. Rambo the cages, and are going on just the same to get the bees if possible. If we can not secure them by mail we will have little hives made, and see what we can do about getting them by express. In the mean time Mr. Rambo will doubtless get into communication with other missionaries who will be able to give us some valuable assistance.—Ed.]

RAMBLE 169.

In Seattle, Washington.

BY RAMBLER.

When I walked up the street from the wharf in Seattle, arm in arm with—my bike, I was not long in discovering that I was in a city with more than ordinary snap and enterprise. The crowd of people on the streets, the jam of vehicles, and the clang of car-gongs, reminded me of the city of the angels in our lovely southland; and, though the skies were overcast with clouds, my first impression of Seattle was good; and with the first effort I made for a headquarters I dropped into the Olympic, a temperance house on a busy public square, and for a temperance house it had the remarkable feature of being run by a one-eyed Irishman. The remarkable feature, of course, was the one eye.

I discovered, soon after arrival, that the steamer for San Francisco had sailed that morning, and the next would sail in five days. To make matters more enjoyable, the sun came out the next morning, dispelled the clouds and the gloom of mist and rain I had endured in Salem, Portland, and Tacoma, therefore if I seem to prefer Seattle to all of those cities, attribute it to the sunshine.

Seattle is a picturesque city. The contour of the land as it rises from the sound in a series of heights and bluffs results in terraced streets much like Tacoma. From the upper portions of the city there is a fine view of the sound, its shipping, and the surrounding country. All of these northern cities have a particular grand mountain over which they exercise an ownership, and to which they point the finger of pride; so the proud fingers of Seattle point to Mount Rainier, 14,000 feet elevation, and always wearing a white cap. Seattle is also a hustling place, for in less than 20 years it has grown from a small town of a few hundred inhabitants to a city of 70,000. Other cities go to great expense to create artificial lakes in their parks, and which, after all, are mere ponds; but here in Seattle are several pretty natural lakes, and bordering upon the east side of the city is Lake Washington, 20 miles long and 5 in width, a beautiful sheet of water with many islands dotting its surface.

This city, like Tacoma, has fine wheel-paths; and after we get up some of those terraces and out of the business portion of the city, we find a portion of a certain street reserved for a wheel-path. A space about four feet wide is laid off from the curbing, and nicely rounded up with gravel. This follows one street and

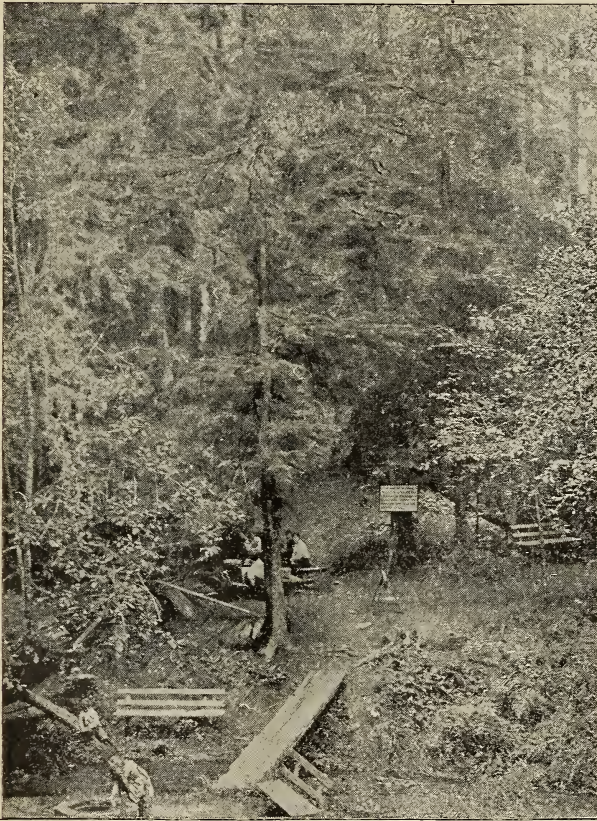
then another until it runs out into the country. Still it winds along, following the indentations of the hills, now into a gorge where immense trees throw a deep shadow. Here is perhaps a rustic bridge, a little stream of water tinkling from a cooling spring. Then we whirl around fern-covered banks, or out on a bluff where, like a vision from fairy-land, there bursts upon the eye a sparkling lake, beautiful islands, evergreen forests. Away yonder is a little steamer laboring toward an island; here the white wings of a sail-boat with its jolly crew; in the distance the snow-clad Cascade range of mountains, the home of the fir and the pine. Ten miles of this varied experience, and at every turn new vistas and new beauties, I would fain wheel on and on for ever, but have to halt at one of the pleasure-resorts on the shore of Lake Washington.



A WHEEL-PATH UNDER THE FIR-TREES.

The return trip is as enjoyable as the first, and I have to dismount several times to take in more fully the beauties of the landscape. At every point where our wheel-path makes a sudden curve around a bluff or in a gorge there is a warning sign, "*Keep to the right; go slow!*" As I mingled with the devotees of the wheel on the way—all ages, sexes, and conditions of life, I found it quite necessary to heed the warning; and I found in those bold letters a fine subject for moral reflection. I imagined this to be the great highway of life. As we jostle along with the crowd there may be an occasional temptation to give a sharp or even a profane word; but, young man, see yonder sign: "*Keep to the right; go slow.*" There is danger in convivial habits; and in the saloon along our pathway is the first chance and the last chance. Would you

escape them all? "*Keep to the right; go slow.*" Does the gambling den have an attraction? Beware, young man; "*Keep to the right; go slow.*" Is there a temptation to be unfair in business? Beware again. It is the upright and honest dealer who runs the longest and most prosperous race. "*Keep to the right; go slow.*" Would you become a good bee-keeper, noted for the neatness of your apiary, and the excellence of your product? "*Keep to the right; go slow.*" I was led to these reflections, perhaps, from what I had learned about a bee-keeper the previous day, and whom I thought lived near Seattle.



RESTING BY THE FOUNTAIN.

At any rate my thoughts had a tinge of mourning over the moral condition and conduct of said bee keeper. Sit down upon this fir stump and I will tell you. I had met this young man several times in Southern California; and though his home was in Seattle I did not expect to find him very prosperous, for I had learned that he had lost about 100 colonies of bees by some one poisoning them. My first inquiry about him and his whereabouts was of a grocer.

"Oh!" said he, with a sneer, "that fellow out at Latona; he was run out of the country, and it is a good riddance."

But for all the grocer said, I went out to Latona, in the suburbs of the city, and made further inquiries of a man who was splitting wood near his door.

He put his ax on a block of wood, and, leaning on the handle, looked at me rather quizzically. "You any relation to that fellow?" said he.

"Bless you, no," said I, with alacrity. I had in mind what the grocer said, and had no desire to claim relationship. As your readers are aware, I have met hundreds of bee-keepers, and, almost without exception, they are worthy to hold relationship with the best blood in our land. The exceptions are so few that it really hurts us to find one in a low stratum, in the slime of humanity, as it were.

The wood-splitter corroborated all the grocer had said, and more too. Said he, "Stranger, if that thing had happened in any of the old settled portions of the East, that fellow and that woman would have been tarred and feathered and ridden out of town on a rail, or they might have been treated to a rope and a limb of a tree with equal justice."

A short distance through the brush from this man's house I found the deserted cabin. Bee-hives were piled up, others scattered promiscuously, bees poisoned, the bee-keeper run out of the country, and all because he did not heed the warning that is before us all, and which a man, though a fool, can heed: "*Keep to the right; go slow.*"

There are a few bee-keepers in a small way around Seattle, and a few efforts to find them resulted in finding the very ones I was looking for had moved out of town or else had moved out of the business, just as I had found it in Portland and other places in this northern country.

I found one neat little apiary close to one of those charming wheel-tracks, and within sight of Lake Washington; but an interview was denied me, for the good people who lived in the neat little cottage were not at home. Stumps and bee-hives were mingled in the apiary, for this country has not gotten beyond the stump age. A good growth of ferns also spread their fronds for a shade.

I interviewed quite a number of the grocers, and in every case found them selling California honey, both comb and extracted, the latter in one-pound screw-cap tumblers with a piece of comb honey surrounded with extracted honey. The comb honey had the label of

a San Francisco commission house on the shipping-case; but the honey in the tumblers had no such distinguishing mark. The grocer did not have as strong a prejudice against California honey as I had found further south, and this honey in tumblers had a ready sale, therefore it is reasonable to suppose that it was reasonably pure honey.

In writing of the humidity of this northern country I may have fallen into a fault-finding vein; but under the genial skies of Seattle I feel like uttering an apology, and giving this land its just dues. When we compare the rainfall of Oregon and Washington with certain portions of the East I find it about the same. The only difference, if any, is the concentration of the rainfall here into certain months, while in the East it is distributed through the entire year.

Then another remarkable point crops out. Although it is called a web-foot country, there are portions east of the Cascade Range where mountain and air currents are so combined that moisture-laden clouds are deflected, and there are large areas of the country where there is but little rainfall, and the irrigation of farming lands must be resorted to.

The bee-keeping industry is in its pioneer stage, for there is not enough honey produced to supply the home demand. As the country becomes more and more reduced to farm products the better it will be for honey production. Some locations toward the coast are highly spoken of for bee-keeping. Then there are others east of the Cascade Range, notably Walla Walla County, which are quite thickly settled, and devoted to general farm products.

I spent Sunday in Seattle, and found a large church-going community. The Congregational Church where I attended would seat nearly a thousand people, and every seat appeared to be full at the morning and evening services, and from appearances the other churches were as well patronized. The Y. M. C. A. numbers 500 members, and is a growing and thriving institution. Here this Sunday afternoon there is a crowd upon the streets. They march and sing and shout, and are doing a world of good; and whenever I meet these lads and lassies I mentally ejaculate, "God bless the Salvation Army!" They get on a rapid pace when it is toward good; but when the evil appears, their motto is to "*Keep to the right; go slow.*"

HOLDING THE BREATH WHILE HANDLING BEES.

A CORRESPONDENT in the *American Bee Journal*, a Mr. Raymond, says nothing is so offensive to the bees, and nothing so angers them, as a man's breath. I have noticed this myself many and many a time; and when I get a comb close to my face to discover eggs, I invariably hold my breath, or take an inspiration rather than an expiration. For the fun of the thing I have sometimes, when well veiled, breathed on a comb of bees, and instantly the veil-front was fairly covered with an angry mass of sizzling bees with tiny drops of poison protruding just beyond the end of my nose.



One result of the short honey crop is an advance in the price. The price quoted in this city for new extracted honey is 7½ cts.

Mr. Pender, from Australia, made a brief call upon Los Angeles. He found his way to the Rambler's apiary, and partook of those delicious flapjacks. From Mr. Pender's account Australia must be a good honey country. He almost gave me the Australian fever.

Evil reports come from some of the interior locations. Half of the bees have died from last year's famine, and now another famine threatens, and that will use up a large number of the remaining half. Foul brood is also rampant in some quarters. Evils never come singly.

Mr. H. E. Wilder and his wife have gone to Oro Fino to manage Mr. Levering's apiary. The prospects are fair for a good honey yield in that portion of the State, though the season is cool and later than common. Mr. Wilder carried his guns. If the deer and the bear knew as much about him as I do they would all move over into Oregon.

Several tons of honey have been harvested near Riverside where the bees had access to the orange-orchards. The orange-blossoms yielded a good amount of nectar this year. A limited amount of sage honey is coming into the Los Angeles market, showing that there are a few favored locations. There will be hardly enough, I think, for home consumption.

Dr. Miller has a demurrer on page 211. He says that, when he knocks a bee down that is pestering him, another bee does not take its place, and his experience is limited only to the dinner hour. Now, it is clearly the odor of the dinner that keeps the bees away. Say, doctor, are you sure that it was not the odor of the dinner that knocked that single bee down, instead of your hand or your paddle?

I clip the following from the *Criterion*:

THE ARMY IN THE DRUM.

A soldier sought the battlefield;
Where first in coat of blue
He passed before the Angel Death
In swift and stern review.
The broken swords were sheathed in mold,
The rusty cannon dumb;
But in the tangled grass he found
An army in a drum.

The sticks were gone that rattled once
Tattoo and reveille,
The shell that took the drummer's life
Had burst the head in three.
But from the shattered sheepskin rose
A low, continuous hum,
The murmur of the rank and file—
The army in the drum.

For there the bees had built a home
And stored the sweets away,
From blossoms born of soldier blood,
The mingled blue and gray.
Where once the morning sky beheld
The charging columns come,
They pitched in peace their waxen tents—
The army in the drum!

ALMA APIARY.

Belonging to George Gould, Rocky Ford, Colorado.

BY J. T. CALVERT.

The illustration on this page shows a tasty and well-arranged apiary in the great melon and alfalfa region of Southeastern Colorado. It is located some two miles to the northwest of Rocky Ford; and when I visited it two years ago it was surrounded with very large tracts of alfalfa, with the delicate blue flowers in full bloom. The mowing-machines were hard at work cutting the heavy growth of alfalfa for hay, and cutting off the foraging ground for the bees. Owing to the presence of a troublesome weed they were cutting the hay a little earlier than usual, so as to prevent the weed going to seed or getting too large. They usually cut four crops of hay, and each crop yields honey before it is cut. The large object at the left of the house in the picture is a stack of alfalfa hay. Nearly every farmer

7-to-foot, on T tins, in the regular shallow dovetailed super, which is generally made $\frac{1}{2}$ inch deeper to provide for undue shrinkage in this very dry climate. Two tin separators are used in each super, and full starters of extra-thin foundation in the sections.

Most of the honey produced in this section is the finest white alfalfa. Sometimes the bees gather from white sunflower a strong-flavored amber honey, but prefer the alfalfa when that is in bloom. Mr. Gould, the owner of this apiary, formerly kept bees in Kansas; but owing to successive years of drouth, and unfavorable conditions, he was forced to leave. He seems to be prospering well in his new location. He is a careful bee-keeper who appreciates nice implements and good workmanship. His apiary and honey-house are models of neatness, and he certainly does his part well in attaining the success he merits.

Mr. H. F. Hagen started Mr. Gould in this location, and may still have an interest in the apiary. He has also started many another in



APIARY OF GEO. GOULD, ROCKY FORD, COLORADO.

has a few bees, so they are more inclined to leave the bloom as long as they can for the bees than if they were not personally interested. The luxuriant crops of fruit, clover, melons, etc., depend almost entirely upon irrigation, hence the conditions are more regular and constant. Beyond the irrigation-ditches the country is almost a barren wilderness, used mainly for grazing when used at all. This region has a reputation all over the country as the place where Rocky Ford cantaloupes come from. Hundreds of carloads of melons and cantaloupes are grown and shipped each year.

The apiary has very greatly expanded in size since I saw it two years ago. The hives used are the eight-frame Dovetailed and dovetailed chaff. The sections used are $4\frac{1}{2} \times 4\frac{1}{2} \times$

successful bee-keeping about Rocky Ford. When I was there there were over 2000 colonies of bees within a radius of four or five miles of his home in Rocky Ford.



BUILDING UP AFTER SWARMS.

Question.—Please tell me in GLEANINGS how I shall go to work to build up after-swarms of bees so that they will make strong colonies to go into winter quarters. My after-swarms

always come out weak in the spring, as they go into winter weak.

Answer.—Before answering the above I would say that, as a rule, I do not think it pays to try to keep or build up after-swarms, for the reason that, with an after-swarm, goes all prospect for any surplus honey from the parent colony from which it came. To hive each first or prime swarm that comes, generally allows of very nearly doubling the number of colonies in an apiary each year; and unless winter losses are great this would build up an apiary as fast as the experience of a novice would warrant, did he expect to become the most successful apiarist. Then, again, the amount of surplus honey obtained from the parent colony from which no after-swarms are allowed to issue would, as a rule, sell for more than enough to buy good full colonies to take the place of the after-swarm, and thus all fussing with after-swarms be saved. Of all the annoyances and nuisances in the apiary, with me, after-swarms are the worst. Many the

the questioner and the readers of GLEANINGS how I used to do this when I was more anxious for bees than I was for honey.

The very first requisite toward a successful start for an after-swarm is a *frame of brood* to be placed in the hive at the time of hiving them. As the queen with after-swarms is seldom fertilized till the day after the swarm issues, and often not till several days afterward, it is all the way from two days to a week before she commences to lay, so that it is nearly a month from the time of hiving before any young bees hatch or emerge from the cells, by which time the bees going with the swarm are (the larger part) dead, dying of old age, which makes and keeps the colony weak as to numbers, from the beginning till entering winter quarters. By giving a frame of brood this weakness part is very materially helped; for as fast as the bees die of old age, brood is hatching from this frame to take their places; and thus the queen, when she gets to laying, has suitable bees to mature the eggs which she



bee-keeper in the past, who would give ten times as much to know how to be entirely rid of after-swarms as he would to know how to build them up to good colonies for winter, and Doolittle could have been counted among the many.

But it is well to know both how to prevent after-swarms and how to build them up when allowed. I have written several articles on how to prevent after-swarms, but I do not remember ever writing one on how I would treat such swarms in order that they might become good colonies for winter. I can conceive how one might wish to save after-swarms after such a loss in bees as has been experienced the past winter, so that the combs from which the bees died might be saved and again occupied with bees, and so I am going to tell

lays, so that, by the end of six weeks from the time the after-swarm was hived, we have a good populous colony instead of a weakling. Then if, in addition to the frame of brood, we can give the swarm the remainder of the hive filled with empty combs, or, better still, combs having some honey in them, we shall have a colony in the after-swarm at the beginning of winter, more valuable than are those from prime swarms, inasmuch as the queen will surely be at her very best the next year, while the queens in prime swarms often begin to weaken and fail before the honey-harvest of the next year. In absence of combs, more than the one containing brood, I would certainly use foundation, even had I to pay 75 cents a pound for it, did I intend to winter these after-swarms. I am aware that such aft-

er swarms will build almost exclusively worker comb, and I have often used them for such comb-building, using them up in that way; but if I wished them to become strong for winter I would give them every advantage possible, and foundation is one of those advantages, where we do not have the empty combs to give them.

We have them now in good condition except stores for winter; and if stores are lacking they must be fed, the same as any other colony which is short of stores when winter approaches. And, if thus short, don't delay the feeding till cold weather, but do it just as soon as you reasonably expect that the honey harvest is over for the year, allowing 25 pounds of good stores for each colony.

HOW TO FIX HIVES FOR CELLAR WINTERING.

Question.—Please explain how you put bees into the cellar, as to roof and bottoms. Do you leave them on or take them off and leave in the bee-yard? Also tell about ventilation at bottom or top of hive. My cellar is damp, and I have many combs mold.

Answer.—Although these questions are a little out of season I will briefly answer them, as they are from the same person as were the questions about after-swarms, and he wishes answers to the whole in one issue. Where hives have a deep cap or hood, this is generally left on the summer stand, and loose bottom-boards are often left there also, in which case the first hives at the bottom are set up on pieces of 4×4 scantling so as to give plenty of bottom ventilation. Then these bottom hives are allowed to stand nearly their width apart, so that, when the next tier is brought in, they can be set so that their lower edges rest on the upper edge of two other hives below, this leaving the bottom all open for ventilation, and so on till the top of the cellar is reached. This, I think, is the Boardman plan, and it is a good one. The only plan I prefer to it is that used by Dr. Miller, which is to so make the bottom-board that it shall have a bee-space on one side and a two-inch space on the other, using cleats of that width when making the side which is to be up for wintering. Having such a bottom-board, on some warm day, when the bees are flying, a week or two before you expect to put them into winter quarters, reverse all the bottom-boards in the apiary, which will give a space of 2½ inches under the bottoms of the frames, instead of the usual ¾. This seems to be ample for ventilation, and with me the combs come out free from mold, where either the Boardman or the Miller plan is used; and my cellar is so damp that it absolutely drips with moisture nearly all winter.

Borodino, N. Y.



PREVENTION OF SWARMING BY CLIPPING; BY PUTTING ON EXTRA SUPERS.

1. Which is thought to be the better plan to stop swarming—by clipping the queens' wings or by killing the old queen and leaving the colony to depend on a young queen? 2. If by clipping wings, how short should they be cut? 3. Is it advisable to put on crates to give them more room to stop their hanging out when there is not any honey coming in, or ought I to keep crates off till honey commences to come in? A. I. BROWN.

Palo, Mich., May 31.

[1. Clipping queens' wings will not stop swarming. It will only prevent the swarm from absconding in the absence of any one at home to take care of the bees. A swarm with a clipped queen will fly out; and when it discovers the queen is not with it it will return to the old hive, or, better still, if the apiarist is on hand, to a hive with empty combs or foundation, which the apiarist will have placed there.

2. Wings should be clipped on one side only. Cutting the large wing up close may be sufficient; but I would advise cutting both wings on one side, cutting back far enough so there is little more than stubs left.

3. Giving an extra crate of sections may discourage swarming, but it will not necessarily prevent it.—ED.]

THE BARBER PLAN OF STARTING BEES INTO SUPERS.

I see by GLEANINGS we are advised to put on shallow extracting-supers to start bees sooner in storing surplus honey, after which they will work more readily in sections. Are we to take off the extracting-supers as soon as the bees get well started, or let them complete them? Which would you advise?

Corinth, Me., May 29. S. W. CRESSY.

[The half-depth extracting-super may be taken off at the time of putting on the comb-honey super, or it may be placed on top of the latter, and left there until it is sealed. But I would advise, generally, putting this partly filled extracting-super on top of another colony that needs a little coaxing above; then, as soon as they get to storing well, take it away and put in its place a comb-honey super. In this way one extracting-super might act as a coaxer for five or six colonies; but if a bee-keeper has a market for extracted honey, I would leave the extracting supers on each hive, and run for both comb and extracted at the same time. This is contrary to the accepted orthodoxy of bee-keeping; namely, that one should run for either comb or extracted honey and not for both; but I am satisfied that this orthodoxy, if such it be, should be revised.—ED.]

E. F., Wis.—We use only about one-fourth of the manuscript that is sent in for publication. Perhaps some that we do use is not as good as some we refuse. If so, we err in judgment in our selection. It is seldom that any publication is interesting to every reader, from cover to cover. What will interest one will not another.



I FOUND the first basswood blossom open June 14; and to-day, the 15th, the bees are at work on it.—A. I. R.

REPORTS from various portions of the country are very flattering. White clover seems to be out in abundance; and by the way orders are pouring in for sections, foundation, etc., it would seem as if honey were coming from somewhere. The Leahy Mfg. Co., further south, where the season is earlier, write that they are swamped with orders. This would seem to indicate that the flow of honey where the season is further advanced than here, is copious. If it should prove to be the same further north, with us, we'll not complain. It's too early to count our chickens. We may yet have a failure here in the North.

S. A. NIVER AT MEDINA.

WE have just been having a two-days' visit with S. A. Niver, the honey-salesman, formerly of Groton, N. Y., a man who needs no introduction to the readers of GLEANINGS. Just before leaving Medina he wrote a note to W. L. Cogshall, one of his old neighbors, a bee-keeper who owns and operates from 1000 to 1200 colonies. This he showed me, saying, "You can see what I have written to Lamar." On reading the same I begged the use of it in this number of GLEANINGS, as it would be a nice introduction to some dialog matter that will appear in these columns soon. Well, here is a copy of the letter:

Friend Lamar:—You see I am holding forth at Rootville; and during a conversation with Ernest I discovered a stenographer was taking it all down for publication. I may have made a bad break in quoting you, but I guess you can stand it.

Ernest and I wheeled out to Vernon Burt's last evening, and found some of his colonies with two supers on, and booming on white clover, and basswood right on hand, although there is but little of it here. A. I. is so busy with strawberries by the bushel that he fairly stutters. I am having a boss good time, any way. "How are they coming?"

S. A. NIVER.

Medina, June 14.

Our stenographer, by pre-arrangement, has the whole thing down in shorthand, verbatim; and you know Niver is one of those chaps who, when he gets his tongue balanced, as Harry Howe says, knows how to talk. As he has had a very extensive experience in producing and selling honey, he has indeed given some very interesting and valuable matter. As to the "bad break," we will leave him to fight it out with Cogshall later.

"PERSISTING IN ERROR."

FROM the Department of Criticism, by R. L. Taylor, in the *Bee keepers' Review* for June, I take the following extract: "The editor of GLEANINGS, p. 348, joins Dr. Miller in thinking that I am too much inclined to hold on to error against light. What errors, my brethren?" Then Mr. Taylor enumerates several opinions that he has held, but which Dr. Mil-

ler and I may possibly regard as "errors against light." Among them he says he prefers a hand-hole to a hive rather than a cleat clear across it. I could hardly class this as an error in any event, for it would be simply a difference of opinion. In this particular case I incline to the preference of Mr. Taylor rather than to that of Dr. Miller; but I prefer to either a combination of short cleat and hand-hole. Mr. Taylor further says he believes a queenless colony having larvæ and eggs of all ages, left to itself, will raise inferior queens. So far as I can see, there is no error in this, from my point of view, because I partly agree with him. And, again, he believes "that the spores of foul brood boiled fifteen minutes in honey will lose their vitality." Right here I believe our friend is stubbornly holding on to an opinion which, if believed in by his readers, would do harm rather than good. Further down the page Mr. Taylor says he does not take issue with Mr. Cowan on the question of boiling when it refers to 212° only, but that he, Cowan, does not "touch the essential matter at a single point;" that the question is one of boiling in *honey*. Referring back again to page 348, GLEANINGS, Mr. Cowan, in his note to myself, says: "I got GLEANINGS for March 15th last evening, and have gone through the correspondence about foul brood, and I think you are perfectly justified in recommending a long boiling of *honey* so as to render it safe to give back to bees." The italics above are mine; and Mr. Taylor will see that Mr. Cowan not only indorses what I have said on this question, but specifically talks about "boiling honey."

Another probable error of Mr. Taylor's, but a harmless one, is that in relation to color and the attitude of bees toward it. If our critic will read over the evidence as Mr. Hutchinson has done, he ought to be convinced, for Mr. Hutchinson says: "It does seem as if the testimony given in proof of this aversion (to black) is incontrovertible."

The points on which Mr. Taylor and myself disagree are very few indeed; and some of these may be ascribed to locality; for instance, the one regarding large or small brood-nests for honey.

LARGE HIVES AND THE DISCUSSION OF THEM.

THE editor of the *Review* thinks that the subject of large and small hives has been discussed about long enough. To my notion we are just now getting hold of facts. W. H. Eagerty, of Kansas, in the *American Bee Journal*, after having used both large and small hives, says, "I will take the large one every time. . . . And while it takes some time for the bees to build combs in the brood-chamber, they get there every time," and then he winds up as follows:

But take a hive holding 10 frames 10 inches or more deep, and 18 inches long each, and with a good queen—if there is any honey to be had, you will be very apt to get your share of it, and you will not have to be awake nights figuring how to have your colony strong enough just at the right time. Your only wonder will be at the stream of bees as they come and go at the entrance of the hive, how the box can contain them.

I have kept bees for several years, and never ex-

tracted any honey, and I hear very much said about small hives being the best for comb honey, but I knew the value of large hives and very strong colonies of the very best strain of Italian bees.

NAPHTHOL BETA AS A GERMICIDE FOR *BACILLUS ALVEI*.

SCIENTIST H. W. BRICE, the skilled microscopist who has been carrying on a long series of experiments in examining *Bacillus alvei*, and testing the value of various germicides, has been giving the results of these experiments in a series of articles in the *British Bee Journal*. I have already referred to him as having stated that it is very difficult to destroy foul brood in the spore form by boiling. In an article in said journal of May 4, he tells how he tested the value of the various germicides; and among them naphthol beta seemed to be one of the most effective and at the same time harmless, so far as human beings are concerned. Other drugs are perhaps as effective, but they are dangerous for bee-keepers to handle. Carbolic acid, in crystals, did not seem to be as active an agent as naphthol beta. These results were arrived at in testing the strength of the several agents on *Bacillus alvei*, but not on spores. Speaking of the power of spores to resist high temperature he says:

Boiling is almost useless as at present carried out. In fact, I found it necessary to permit some time to elapse between successive boilings, to allow the spores to germinate between each operation. For this purpose a medium must be present of some kind, as without this even successive boiling of hives is mainly unsatisfactory.

SEPARATOR AND NON-SEPARATOR HONEY.

ON page 461 of this issue we show eight sections of honey produced in the apiary of Geo. Gould, Rocky Ford, Col., an illustration of which appears on pages 470 and 471. These eight sections were taken from a 24-lb. shipping-case of honey that was produced at the Rocky Ford apiary and sent here. Mr. Gould uses a separator in every other row of sections in his super. As a result of this, some of the sections are evenly and nicely filled, and others are too fat or too lean. I would call attention to the illustration showing the four sections produced with separators and four without, the bottom row belonging to the latter, as will be plainly seen. These, while being well filled, are too full, and no doubt were completed without separators. They overrun in weight, and do not present the even appearance of those in the top row. All the honey in the case was snow-white, and of very fine flavor, and were it not for the defect named in some of the sections this case of honey would be almost perfection itself.

It would seem to me that Mr. Gould could get more money for his honey if he would put a separator between each row of sections while on the hive; for in some markets, at least, those bulged combs would go at a discount; and occasional handling to determine its quality, selling price, etc., would result in abrading some of the surfaces of the comb. When this were done, the whole case of honey would be knocked down a cent or two in price because it would be classed as broken or leaking honey.

SHADE FOR BEE-HIVES; APPLE-TREES VS. SHADE-BOARDS.

In the *Bee-keepers' Review* for June, the editor shows in the frontispiece what he considers to be a well-shaded hive. It is an ordinary Heddon with three comb-honey supers on top, and a shade-board, or covering, projects over the front of the hive (a foot or more, perhaps) about like the vizor of a cap over one's face. The illustration showing this arrangement represents a hive, I should judge from the shadow, facing the east; or at least the shadow itself comes down two-thirds of the way over the front of the hive. The shade-board does not project over the back, perhaps, over four or five inches; and when the position of the sun is reversed, or at the opposite point in the heavens, the back end of the hive would, I should think, receive the full rays of the sun, except the very small portion protected by the rear four-inch projection of the shade-board. On the shade-board is a stone and a Bingham smoker—the latter not being required, of course, to hold the board on the hive.

The ideal shade for hives, to my notion, is a good old-fashioned apple-tree, or a fruit-tree of any sort with low spreading branches about six or eight feet from the ground. The trees do not leave out, usually, until after the time when the direct rays of the sun would do more harm than good; and during the time when the trees are fully leaved is the very time when the bees need shade. In the rear of almost every country home there is an orchard of some sort; and this is my ideal place to put the apiary, because it affords comfort both to the bees and to the apiarist. There are no shade-boards and heavy stones to manipulate every time the hive is opened, and no time to waste; and, what is more, the hives are completely shaded, except, perhaps, early in the morning and late in the afternoon, when the rays of the sun are very mild. We have used shade-boards here; but when we can get trees we prefer them. A. I. R. formerly preferred grapevines nicely trellised up; but as these involve so much labor in taking care of them, and as the shoots grow so rapidly, and throw out sprawling obstructions over the front of the hive, I have personally formed a decided dislike for them.

Now, a hive can be located in an apple-orchard by its relative proximity to the trees so that the sun can strike the hive up to nine or half past, and again at half-past three. If the locality is in a warm climate, the hive can be set back a little more under the shade so the direct rays of the sun will not strike the hive after eight o'clock in the morning and before five o'clock at night.

Our plan at our basswood-orchards, where we have low spreading basswoods, is to group the hives in fours and fives. This arrangement gives all four plenty of shade, and saves a lot of running to and from one hive to another. Why, it is just comfort to sit down on one hive and work at the other, with tools—screwdriver, smoker, super, etc.—all lying before the hive. Of course, if any of the group are tiered up pretty high, then the sit-down act can not very well be performed.



Blessed are the meek, for they shall inherit the earth.—MATT. 5:5.

Mrs. Root and I had been talking, just before retiring, about the difficulties of enforcing laws against intemperance, Sabbath-breaking, and all the evils that follow along with these things. I had been speaking of the fact that there was to be a Sunday excursion, every Sunday all summer, from Medina, including a boat-ride on Lake Erie, at a very low price. I said I feared that not only outsiders, but even the members of our churches, would be drawn into the fashion of making Sunday a *holiday* instead of a *holy* day. As we knelt down before retiring, and prayed over the matter, I ended my prayer by thanking God for the promise that the meek shall finally inherit the earth. As I arose from my knees I realized with unusual vividness what a tremendous change would have to be made before the *meek* instead of the *millionaires* and great railroad men shall have charge of affairs, and own and *manage* the earth. But while I was thinking, Mrs. Root voiced my thoughts by saying, "Why, it does not seem possible, the way things are going, and the way every thing is tending, that the meek can *ever* inherit the earth;" and I confess that I have several times of late been wondering whether we could not have a community of people gather themselves in some spot on earth where everybody loves righteousness and hates iniquity. I confess I have at times of late felt really tired of working so hard to get laws passed in one little particular, and then see them trampled under foot right away by somebody else who seemed ready to crowd in and sacrifice every thing for greed and gain. Well, I do not suppose the great Father ever intended or really wants us to go off by ourselves and let the rest of the world go to ruin, if they are so determined on it. I think he means us to stay right where we are, and do our best in holding the fort. I feel this, because right in that same chapter from which my text has been chosen, he tells us, "Ye are the salt of the earth."

Perhaps one reason why things look so discouraging at times is because we have been looking only on the discouraging side. There is another and a brighter side. Every little while, if we take notice, we may witness cases where the meek are quietly winning great battles. Let me tell you a little story to illustrate the matter:

Some years ago a German whom we will call Jacob came over from the fatherland, bringing his wife and a lot of healthy children. He did not have very much means, but he had health and strength, and a love for honest toil; and this, his wife and children all possessed like himself. Jacob got a little piece of land where he could engage in truck gardening. He did not have a team to plow his ground, because, first, he could not afford one; and, secondly, most of the plowing was done with

one horse, any way in that beautiful soft loamy soil on the banks of a great river or bay that came in from the sea. To tell the truth, Jacob did not have even a horse. At that time, in that locality, many poor people used an ox or cow when they could not afford a horse or a mule; and Jacob commenced making a home in the new land, with only one beast of burden; and by some queer combination that I do not exactly know about, this beast was a good stout *bull*. With this animal he plowed his ground, and moved his produce in a good heavy cart, and no doubt he felt happy; but one day when he was taking something to market his first trouble came. In the neighborhood they had one *rich* man. I do not suppose he was a millionaire, by considerable; but he owned the only span of ponies and the only carriage there was in the whole region, and he was very fond of driving about with his fine equipage, and giving people to understand that *he* was somebody of importance, and I believe he sometimes had a fashion of ordering people out of the way.

One day, in driving out with his ponies and carriage, he met Jacob coming up the road with his bull and cart. The horses were frightened at the odd equipage, and began to show their fear. At this point the rich man (we will call him Mr. Y.) peremptorily ordered Jacob to drive off into the woods with his ungainly rig, so that he could pass with his ponies and carriage. No doubt Jacob felt hurt, but he meekly submitted. Now, like most of the German people, Jacob believed in Sunday and in going to church; and as there was no other way to get there with the whole family he loaded the wife and children into the cart one bright Sunday morning and brought them all to church, leaving his bull and cart hitched to a tree near by. Soon after, Y. came to church also with his fine equipage. The horses were, of course, frightened again at the strange animal. It seems to me that I have heard that the bull bellowed a little in his low grumbling way, like distant thunder, but that may not be true. Y. was exasperated to think that Jacob should have the cheek to go to church and bring the obnoxious animal. I presume Y. gave more than anybody else toward the support of the minister. Perhaps he gave more than anybody else toward building the church, and naturally supposed he was boss of matters on Sunday in that whole community as well as on week days; besides, he was angry, even if he *was* a member of the little church. He walked right in among the congregation, and called Jacob out. Then he gave orders for him to take that bull home, and never bring it around there again to scare horses and disturb honest Christian people. Jacob meekly submitted, but said he would first have to go in and get his wife and children. The poor little flock on this, the first morning they had ever undertaken to go to church in the new land, were put back into the cart, and the sad and sorrowful band went back to their home in the woods. Jacob told Y. that he would not come any more, but Y. did not relent. I do not know all the circumstances; but it is a wonder to me

that the good pastor did not interfere in behalf of the family; and where were the good women of the church? the Sunday-school superintendent and the teachers? Something may have been done, but Jacob did not go back. He and his wife and children stayed at home—perhaps had Sunday, and worshiped God by themselves. But they soon became very successful gardeners, as such a German family would, of course. Oh how I do love the sturdy, hard-working, quick-witted and quick-moving German people! Sometimes they are a little slow in getting the hang of things; but when they find out just what is wanted, I do not believe there is any people on earth that can do more work in a day. And then they are, as a rule, such clever, neighborly, kindly, and generous people. When it comes to endurance there seems to be no limit to the number of hours they can work, and work faithfully, and this is true of the men and women, and boys and girls. I know, for it has been my good fortune to work with them more or less a great part of my life.

Jacob prospered—*of course* he did. He learned how to grow better stuff than anybody else, and his wife and children got it into shape for market in better season and in better style than anybody else. Y. kept on in his domineering way, and pretty soon people got a dislike for him, notwithstanding his riches. He finally got into financial troubles; and the church building, that had never been paid for, became involved in some way. The owner of the property threatened to shut it up unless a certain sum of money was forthcoming at once. They had been having bad seasons, and the people were poor. Nobody around there had the money to spare, unless it was Jacob; and Y. was appointed to go and see if Jacob would not lend them money to keep up services. I do not think Jacob had been working for revenge; but he did remind Y. of the time when he drove him and his poor wife and family out of God's house. But he handed over three thousand dollars, told the church people they could take their own time for payment, and I rather think he let them have it at a low rate of interest; and Jacob came back and brought his family, and helped the rest to worship God and to remember the Sabbath day to keep it holy. Yes, and Jacob came to church too with a span of horses, and carriage big enough to bring the whole family. The skill he had acquired in gardening in that particular locality enabled him to make sure ventures year after year when almost everybody else failed. He added farm after farm to his possessions; and as soon as he got a new farm he let one of his boys or girls take charge of it. Come to think of it, I am not *sure* of this, for you see I am filling out the story a little, when I didn't get full details. God prospered him, for he was a *good, honest, square man*. While he learned to make every thing succeed that his fingers touched, Y. seemed to be going in the opposite direction. His property had to go until only one farm was left, and that was to be sold at a great sacrifice unless somebody interposed. The only one in the neighborhood who could

help him was Jacob. Would he do it? Y. went to see Jacob; and with bowed head, and probably tears in his eyes, he told the stories of his misfortunes.

This time Jacob did not say any thing about the unneighborly treatment of years before, but he *forgot* and *forgave* all that unkindness when he was a stranger in a strange land, and handed over the money once more—stood between Y. and his merciless creditors, and made things easy for him. Oh is it not a beautiful sight, to find one who can really love his enemy, and *do good* to those who hate him? After a while Jacob bought property in the adjoining town; and not long ago he put up a beautiful block of brick buildings; and in great big letters that can be seen far up and down the street you may read, "Jacob's Block." And even though Jacob has wealth, and power if he chooses to use it, his wealth has not made him proud and arrogant. He is still ready to extend a helping hand to—I came pretty near saying, to *friend or foe* who might be unfortunate. Oh that we had more Jacobs in our land! Oh that we had more *rich* men who believe in following Christ's words when he said, "Love ye your enemies; do good to them that hate you"! I do not know that Jacob ever noticed the promise, "Blessed are the meek, for they shall inherit the earth;" but I do know that such a record as his is a *better* sermon, many times, than some of the sermons we hear from the pulpit.



For many years I have been thinking of a trip to Norfolk, Va., during strawberry time, not only to witness the strawberry harvest, but to take in the truck gardening generally. Well, along toward the last of May, when our potatoes were mostly sold or planted, and the seed business was pretty well over, I began to feel a longing to get out in the world once more; and when I noticed in one of the dailies that I could get a round-trip ticket from Cleveland to Washington for only \$11.00, it made me get the traveling-fever still more. Before telling you more about my trip, may I say just a word in regard to traveling generally?

To travel easily, expeditiously, and at small expense, is a trade, or, I might say, one of the fine arts. Of course, we want to go comfortably, and we want to have due regard for health; for it is not only expensive business, but it is rather unpleasant to be sick while away from home. Although I have had quite a little experience, I seldom make a trip but that, after I look back, I see where I might have lessened expenses and saved time; therefore one had better study the matter well before he starts out on a trip of any extent. One does not want to lumber himself with needless baggage, and yet he wants every thing along that is really needed.

I usually take about a week to collect things that are wanted, and put them in my valise. Be especially particular about having accurate addresses for every person you wish to find, and give them notice beforehand, as nearly as you can, when you expect to call on them.

I find it very convenient to locate many of the little things in different pockets in my suit of clothing. For instance, I always have one special pocket for my railroad ticket; another one for dimes and nickels; still another for quarters and halves, and an inside vest pocket for paper money and checks that are to be used as I happen to need them. My vest is also placed under my pillow, and in this way I never go off and forget my pocket-book or watch. One of my inside coat pockets contains postal cards addressed to The A. I. Root Co. In this way I can easily drop Mrs. Root a card, giving her notice every day or two "where I am at." Another inside coat pocket contains addresses or letters of introduction. In my outside coat pocket I have an extra clean handkerchief; then in the hip pocket to my pants is a soiled handkerchief. I use the latter, so as to keep the former clean when in the presence of company. In riding my wheel I have a still older silk handkerchief, to dust off my shoes before I enter a dwelling. In another pocket I have a toothpick; in still another, my eye-glasses; and I carry also an extra pair of eye-glasses lest I should mislay or lose the other pair. Then I have sundry other articles that are sometimes in my pockets and sometimes in my valise—a bicycle-pump and wrench, for instance. When I travel by wheel my valise is sent ahead by express, or left until my return. By having every thing thus conveniently arranged one may catch a train or make connections that, to miss, might cost hours of waiting, or sometimes a whole day.

Whatever you do, never keep the conductor waiting while you are hunting for your ticket first in one pocket, then in another, and the same way with your money. Never keep anybody waiting while you hunt for it. Have every thing you need so that you may quickly and easily put your finger right on it.

I reached the city of Washington early Tuesday morning. This was to be a sort of strawberry trip, therefore I proposed hunting up strawberry-growers. I had written to A. T. Goldsborough to meet me at the train, if he could conveniently. Well, I made mistake No. 1 by not remaining on the platform a few minutes longer. He was a little late in getting around, and I suppose I stood there about three minutes, and then started on an exploring expedition. Starting off too soon was mistake No. 1.

Mistake No. 2 was in depositing my valise in the check-room before I had taken out the paper containing the addresses of bee-keepers in Washington. I paid ten cents to leave it till called for; so when I asked the agent if he could let me have it back long enough to get a letter, he said their rules were, no handling of baggage until you want to take it away; so *that* one piece of omission cost me ten cents.

Now, do not go on about people being unaccommodating at a great railway station. When a train comes in there is a lot of people wanting to deposit their baggage or take it away; and this rule is plainly printed and posted up so that careless people won't be all the while bothering them. When you are traveling, submit to the ordinary rules of travel. Do as other people do—look pleasant, and you will have a good time which you will not have if you stop to grumble and complain of the great busy business world.

Mistake No. 3 was in discovering that I had neglected to bring friend Goldsborough's address; but I felt so sure it was Washington Heights I *thought* I did not need any address; but when I asked the car conductor about Washington Heights he said he did not know any thing about such a place. He called to another man on another car, and he said he knew ever so many "Heights" but no *Washington* Heights. Some of the passengers thought they knew where it was, and I spent all the forenoon (and a lot of nickels) riding all over the city here and there. Toward noon the conductors got so they knew me, and asked me to report progress; and it seemed to me that most of the motormen in *Washington* were helping me to find "Washington Heights" before I got through.

About dinner time I decided to hunt up a bee-keeper; but when I got as far as I could go I found the cars were more than a mile from his home. Then I had to go a mile straight back again to a bicycle store to rent a wheel. I found the place by seeing a hive of nice Italians right beside the front door; but Mr. Johnson was away from home. His wife brought me the bee-journals, and pretty soon I found that A. T. Goldsborough was at *Wesley* Heights, about four miles out of the city. I found his pretty home away off among the hills, and I was lucky for once in finding him right out at work among his strawberries, egg-plants, chickens, etc. He does not allow the *grown-up* chickens in his garden, by any means; but he is the man who has on his grounds a brood of little chickens all the while to take care of all kinds of insects that bother his egg-plants or any other garden stuff.

I was just in time to test some samples of the delicious pink and white Louis Gautier strawberry. He had many other seedlings to show me that were of much interest; and he has several *special* seedlings of the Louis Gautier that promise to correct any faults this delicious berry may have.*

**Since the above was in type we have the following from friend Goldsborough:*

Mr. Root:—I am sorry you made such a flying visit, as I had time to show you only a few strawberry-plants in the kitchen garden. I have fruiting-beds in four other parts of the 50 acres, and four or five different soils can be found. I took in a basket of English seedlings to the Department of Agriculture yesterday, as a gift to the Secretary, Mr. Wilson. The berries made quite an excitement there, as I do not believe a two-ounce berry had ever been seen before by any of them. As my berries averaged $3\frac{1}{8}$ ounces, you can imagine their surprise.

Mr. Saunders, the veteran horticulturist, said he had never seen such fruit. Acting Pomologist Wm. A. Taylor picked out six which filled a quart box, and weighed nearly $18\frac{1}{2}$ ounces—an average of $3\frac{1}{8}$ ounces

I was obliged to make my stay short, however, for I had lost the greater part of the day by that little bit of carelessness about the address. Another thing, a thunder-cloud was looming up and muttering. Yes, I got caught in the rain, and took refuge in a dainty little station built for the trolley-car passengers. But they have good roads in Washington, and so I was off again on my wheel almost before the drops of rain had stopped falling. I thought when I came to the asphalt pavement I should be lucky; but the rain water that had been soaking into the graveled roads just stood on top of the asphalt; and before I knew it I had sprinkled my back, and my Sunday pants pretty well in front, with muddy water. By the time I reached the city, however, it was dry enough so that a colored boy brushed me up and polished my shoes so I looked pretty well by the time I was ready to take the Norfolk boat.

Where was our good friend Danzenbaker? Why, I omitted to take his address also, and by the time I reached his dwelling he too had gone out of the city. I had a delightful ride over the Potomac during the night; and early the next morning, while I was taking in the wonderful sights of sailing vessels and every other kind, going in every direction, I espied a great big steamer that looked as if it had just risen out of the depths of the ocean. In fact, I said to somebody that I wondered what they were going to do with that old "rusty-looking tea-kettle" of a steamer. What do you suppose it was? Why, it was nothing but the *Reina Mercedes* that was standing off the coast of Newport News. People were very curious about it, and wanted to explore it; but the sentinel stationed on the boat gave orders that nobody be allowed to set foot on it, no matter how curious he might be.

At the boat-landing my good friend J. W. Stebbins, who had given me a kind invitation to make them a visit, was there ready to receive me; but there were so many hackmen, and they were so determined to get hold of my valise, or catch me by main strength, that I pushed along, trying to make them believe I *knew* where I wanted to go. But I didn't, after all. I should have waited at the landing until my friend had decided who A. I. Root was, and made those fellows let me alone. That was mistake No. 4. This was not a bad one, however, for by the time I reached my friend's office he was right behind me. When I told him I had only 24 hours to spare to see the truck-gardening of Norfolk, he seemed a little dissatisfied; but as his horse was already hitched up he said we would get off and make the best of the day before us.

each. The largest berry had been picked nearly 18 hours; had been handled by many, and had bled some, or it would have smashed the English record of four ounces, which it tied. This berry could have hung on at least a day longer, as it had a green spot on its side as large as a copper penny, and would have gained some. I had to pick it because some of the rest were overripe and losing weight. This 4-ounce berry measured $1\frac{1}{2}$ inches in circumference. It was photographed for the department. Weighing and measuring were witnessed by four gentlemen connected with the Division of Pomology, all of whom signed a paper to the statement I have made.

Washington, D. C.

A. T. GOLDSBOROUGH.

Very soon I began to discover one of the reasons that induced market-gardeners to gather at that point. There are salt-water bays and inlets running away up into the land in every direction, so that the produce from gardens can be easily loaded on boats so as to be shipped by water anywhere it is wanted. I was pleased to see a mule, hitched to a large-wheeled cart, walk right down into the water with a load of truck, and back it up so the contents could be easily lifted into a boat. You see the large wheels of the cart raise the body up considerably out of the water. This little boat then runs up alongside of the steamer. The large truckmen have also a platform or landing beside the track, so as to load the stuff on the cars. A side track runs out through the gardens, and little spurs go out still further right beside almost every large farm.

Almost the first thing that greeted my eyes were great fields of early potatoes. These are planted in rows as straight as one can draw a line. The stand of vines is all even and regular. There are no very poor spots nor extra good ones. This is in marked contrast with out potato fields and grain-fields here in Ohio; and, most surprising of all, there are absolutely *no weeds*. There are hundreds of acres where I did not succeed in finding a weed of any sort, big or little. These potatoes are grown for the early market in the north, and the men who own them are experts. They have decided by long experience that they can not afford to buy expensive fertilizers (nor even stable manure) to furnish weeds fertility to grow on. This even stand of crops is secured by careful attention to several important details. In the first place, the ground is thoroughly underdrained. Most farmers would think such a porous soil would not need any tiling. Not so with the Norfolk truckers.

One of the most successful and largest gardeners is Mr. E. E. Trotman, of Churchland, Va. Just to give you an idea, I will mention that he buys 500 tons or more of chemical fertilizers in a year. The farms are divided up into lots of several acres each, with roadways running at right angles. Where the roads cross each other I noticed what I took to be small-sized wells walled up with brick. They are, perhaps, a yard across. On looking down into one of these wells I found they were silt-basins with tiles opening into them from different directions. In order that the tiles may not be so very close together, there are many of them down to a depth of $3\frac{1}{2}$ or 4 feet, and sometimes more than this. To show you what an amount of water some of these tiles are expected to deliver, I will mention that one of the outlet tiles was 14 inches across. Mr. Trotman says he wants these wells so he can look in when it rains, and see if every line of tiles is doing its duty. If it is not delivering the quantity of water it ought to carry, then the matter is looked into. Now, there is a good point, friends. Have your tiles so you can tell from the outlet whether they are doing their duty.

I learned during the conversation that Mr.

Trotman sows as much as a ton of spinach seed every year. Spinach is a big crop for the city markets.

Where we took dinner our host told us he was offered \$1.00 per cartload for all the stable manure he had to spare. He said the man who bought it carted it six miles at that.

While some men amass great fortunes in this sort of truck-gardening, there are others who complain that "farming does not pay," just as they do here at the North. It is the man who uses his brains, and profits each day and each hour by past experience, who succeeds; and after one has got the business so under his thumb that he can manage to grow the crops and sell them at a profit (that is, as a rule), there seems to be no limit to what he may accomplish. He can keep adding farm after farm—that is, so long as he can advise and direct the management. The secret of having clean crops is by putting in practice the very latest methods we have here at the North. Their light and porous soil is, of course, very much of an advantage to work. The potatoes are planted and covered very much as we do it—that is, the pieces are dropped at the proper distances apart in a furrow, and then the ground is thrown over them so as to leave somewhat of a ridge. Just before the weeds get to be visible this ridge is worked down a little with horses and proper tools. After a few days, or when the rain has made a good crust on the soil, this crust is broken, and the ground worked down a little more. This is continued till after the potatoes are up, breaking the crust and stirring the soil right in under the plants; and no field is ever neglected so as to let the weeds get the start. It does not pay; neither are bugs allowed to get in their depredations. Some of the truckers sprinkle on Paris green and plaster. Some use a barrel on wheels (with Paris green and water) that sprays four rows at a time.

Now, these truckers have a sort of rotation in garden stuff. For instance, potatoes are grown mostly between strawberries, or, rather, strawberries are grown mostly between potatoes. The rows of potatoes are five feet apart in this case, and a row of strawberries is put between every two rows of potatoes; and, judging from appearance, they are set in about as soon as the potatoes come up. The small-footed mules pull their light cultivators between the rows, only 30 inches apart, without any trouble. I believe they are rather better than horses, because they rarely or never step on the plants. After the potatoes are marketed, then the strawberries have the whole of the ground. To give you some idea of the strawberry business at Norfolk, I make the following extract from a letter from friend Stebbins:

Saturday afternoon, at the back of one of our steam-boat wharves I counted 17 sail-boats unloading strawberries at once, while others were in sight coming in to unload, and still others going out unloaded. At the front was a string of teams a quarter of a mile long, waiting their turn to unload. Three teams could unload at once, and I don't think it took more than five or six minutes to the three teams. In going a mile I counted 15 more teams coming in, all loaded with berries; that was at half past three, and that sort of thing would keep up until six or half past. Now, that is only one of half a dozen lines in town at the same

business. You could smell strawberries for half a mile. JOHN W. STEBBINS.

Broad Creek, Va., May 15.

At the time I arrived, the strawberry-gathering had come to a sudden stop, not because the berries were *gone*, mind you, but because the price had dropped to a point where it did not pay to pick them. In Norfolk they pay two cents a quart to the pickers. Then they have to furnish crates and boxes; and at the price offered, only three cents, it did not pay for harvesting. So the owners of the fields, even while the rows were red with berries, gave out to the country all around that whoever chose, colored or white, could come and pick, without money and without price, all they wished. We found colored people scattered all over the fields, picking; others walking into town with crates of berries on their heads. They went through the town offering them at the houses for only three cents a quart. As the berries cost them nothing, they did perhaps very well at the work; but it seemed to me to be rather discouraging business for the grower.

In some places we found the pickers scrambling out of the way of the horses and plows. They were turning the berries under in order to get in another crop without letting the expensive land lie idle. Friend Stebbins says he has seen berries turned under when there were enough to make the red juice follow the plow as it crushed them in the furrow. Three of his family went out the evening before, and in three hours they gathered 70 quarts in one of these deserted fields.

One gardener whom we called on (Mr. Henry Norfleet) had about half an acre of Lady Thompsons. There had been scarcely any berries picked from the field when the price went down. I do not know that I ever saw more ripe berries on a given area at one time. Some of them were really overripe—large and luscious. Nobody wanted them as a *free gift*. We had been eating berries all day—at least I had—but we felt so sorry to see these wasting that we ate a good many more. The Lady Thompson is certainly a very fine berry in the South. It is hard for the growers, it is true; but yet it certainly is a great blessing to a community to have berries so cheap that all can have all they want, morning, noon, and night. I asked some of the growers if they proposed to keep right on raising strawberries. They said there was no other way to do, and that they frequently had to make the best of a glut in the market in almost all kinds of produce; but the man who keeps right on growing good crops is pretty sure, sooner or later, to have something to sell when the price is good and everybody wants it. Just one illustration:

We saw one large field of peas that were entirely ruined by a little aphid that covered the vines. This had appeared this year for the first time in a good many places, and had entirely ruined the crop. Now, the one who is lucky enough to have plenty of peas to sell will get a high price for them.

My attention was called to the fact (and I was very soon satisfied of the truth of it) that

by far the best place for market-gardening is within, say, a mile of the salt water. The sea-breezes, and the salt sprays that are frequently blown over the ground by the wind, exercise a very beneficial effect. So you see there are two reasons for being near the water—the crops grow better, and transportation is easier. Windbreaks are also found to be beneficial, and in some places we saw where a dense growth of underbrush was permitted to grow up along the roadways to keep off the cold winds.

The potato mostly grown here for the Northern markets is the Early Rose, although further south I am told they grow the Triumph more largely.

Nothing has ever been done in the way of irrigation, even though they have many quite disastrous drouths. As our Ohio Experiment Station has recently stated, they find stirring the ground with cultivators much cheaper than applying water, and it seems to answer very well.

As an illustration of how a mere trifle will make all the difference between profit and loss, friend Stebbins gave me an item from his own experience. At one time he was considerably interested in growing turkeys—so much so that he had quite a quantity of turkey manure. He and his neighbor were both growing watermelons. The neighbor was an old hand at it, and used Peruvian guano as a fertilizer. Mr. Stebbins asked him if he did not think turkey manure would answer about as well. The neighbor thought it probably would; and, sure enough, the melon-patch fertilized with turkey manure shot ahead of the other. The vines were of better color, larger, and actually produced more melons. But now just hold your breath a little. The neighbor's melons, fertilized with guano, were ready for market about a week ahead of the other, and the crop sold for *eighteen hundred dollars*. The rank growth caused by the turkey manure made this patch later, and how much do you suppose friend Stebbins got for his melons? Why, just *eighteen dollars* instead of *one hundred times* that amount!

Friend Stebbins has some land that is not very valuable; and some time ago, noticing, as many of us have done, that blackwalnut-trees are commanding tremendous prices, he started to grow walnuts, and has now a 22-acre walnut grove with trees six years old, and almost an even stand. He planted two walnuts in a place, and pretty nearly all of them came up. A single walnut-tree, good size, often brings \$100; and I think we have accounts in the papers of trees that brought two or three times that amount right where they stood in the woods. We may not all live long enough to see walnut-trees grow to be worth these prices, but how about the children who are coming after us? Who will plant walnuts as well as basswoods?

As soon as I reached home friend Stebbins kindly gave me some facts in regard to the gardening around Norfolk, which I gladly submit, as they may correct some errors I may otherwise have fallen into.

TEMPERANCE AMONG THE NORFOLK TRUCKERS, ETC.

All that section known as the "Western Branch," comprising about one hundred square miles of land, bounded by the Dismal Swamp, the western branch of the Elizabeth River, Hampton Roads, and the Nansemond River, where the finest truck gardening I ever saw is done, is under a strict unwritten *prohibition* law, and it is enforced by the best people, with an iron hand.

Although there are perhaps 50 stores within that territory, not one of them could run there a week and sell liquor. The good people simply *won't* have it; and while the temperance sentiment does not make that salubrious climate, it does put tile-trains in the fields, builds fine houses and barns, buys horses, farm-tools, makes fat bank accounts, and happy people. God grant that it may always remain so. [*Amen!*—A. I. R.]

You noticed how straight the rows were in the fields. Now, straight rows are considered an essential to success in trucking; and a trucker who would allow such crooked rows in his fields as I have seen—yes, sir, *seen*—in Ohio would be hooted and jeered until he straightened them or got out of the community. There are four things necessary in making straight rows; in fact, there are five: Even, well-tilled ground; a light one-horse plow; a tall man; a small intelligent horse or mule (a mule is considered to be better); and last, but not least, a pair of six or eight sided sticks 12 or 14 feet long, perfectly straight, supplied with iron socket and point at one end for sticking in the ground, and painted red and white like a surveyor's pole. First a straight row is made by the use of these two poles, using the space between the mule's ears as a third guide. The rows are first laid off double distance, the row-maker in his return "splitting out" the middle row, otherwise three stakes would be imperative. Every trucker has one or two men who do this work; and great pride is taken, both by trucker and man, in the even widths and straightness of their rows.

It might be well to mention that the row-maker always sights some object in the distance just before passing the first stick, which he pulls up and again places exactly two rows distant from where it stood, the last one being done in the same way, stopping the mule to do it just before reaching the poles.

And now, friend Root, allow me to add, for the information of all who contemplate coming South to live, that the greatest mistake they can make is to think that the same methods in successful use in the North are what are needed to make a success here; for verily I say unto you, it is a whopper, and will ruin any man who tries it on, as many a man has found to his cost. I do not mean to say that the methods the generality of people apply here are the best that can be done—far from it; but I do say of a truth that their methods are better for this region than those in use at the North, if applied here. I know whereof I speak. I have been here eighteen years, and have had experience in many things. We need Northern men and their families here, and we need lots of them. There is a living in this country for many who are willing to work; but kindly tell them to leave their old methods at home.

JOHN W. STEBBINS.

Broad Creek, Va., May 26.

I had just one chance to see strawberry-picking going on in the regular business way. Mr. Trotman had received intelligence from Boston that berries were up to 12 cents, and, in fact, I believe *he* had kept picking right along. You see when the fields are once abandoned they can not very well start again, because rotten or overripe berries would get among the good ones in spite of the pickers; therefore the proprietor of a strawberry-field must keep the pickers going till he decides to stop, and then he must stop for good. When I saw the pickers in the field I said to friend Stebbins, "There must be very nearly a hundred people who are gathering berries." I have been so much in the habit of estimating the number of hives in an apiary by simply a casual glance that I thought I could guess pretty nearly at the number of people scattered through the patch. Friend Stebbins counted them, and reported 104. There were all

sorts of people—big and little, old and young, black and white; but for all that, every thing seemed to go on very harmoniously and quietly. Little colored boys, who seemed hardly big enough to carry a quart of berries, would march in with a tray on their heads, and offer their filled quart boxes and get their tickets. Some of them did not have very elaborate clothing, but they always arranged to have a pocket that would carry their *tickets* safely. A smart colored man received the boxes on a sort of counter, letting the picker take his tray back to the field. The proprietor's son was stationed near by with tickets of different values stowed in handy pockets; and he always had the proper ticket or tickets to hand out just as soon as the picker was ready to go back.

We happened to be there just as the dinner-bell sounded, and it was a treat to me to see that motley crowd come in. God knows I am interested in human beings as well as in strawberries; and I was greatly pleased to see the pleasant feeling that seemed to exist between employer and employee. Friend Trotman pays two cents a quart right through for picking the berries. He said it was a little more than some others paid, but he liked to have his workmen satisfied. I asked him where he found his most expert pickers—among the men, women, or children. He said a colored widow woman and her two little bits of children (it might have been three) were about the best pickers he had in his employ. He said he had recently paid her \$23 in cash for one week's work with herself and children. Some of those little colored boys and girls were remarkably quick and handy at the business. You see it is not so much work for them to double up and stoop over as it is for older people. In the rush at noon time it was almost impossible to prevent some confusion and disorder. I was pleased to see Mr. Trotman gently reprove a colored man for tramping on a good new berry-box. Somebody tipped them over, and in the hurry to get ready for dinner they were not picked up. The man put his foot on a nice clean box. Now, the value of these boxes is not much over a quarter of a cent each; but letting the people trample the boxes under foot, even if they represent only a small value, establishes a bad precedent. It always pains me to see property wasted. Waste not, want not. We received a warm invitation to take dinner with the proprietor; but other plans for dinner had been made.

Special Notices by A. I. Root.

THE BRANDYWINE STRAWBERRY.

At this date, June 13, the greater part of our strawberry-picking is over; but to-day we are picking Brandywines almost as large as small peaches, and ever so much more luscious than any peach, in my opinion, and we are selling them at the ridiculously low price of 5 cts. a quart; half-bushel, 4 cts. a quart. The Brandywine, besides its other good qualities, can remain on the vines, without rotting or getting soft, longer than any other variety I know of; and this has been an exceedingly valuable quality during this year of gluts in the markets and exceedingly low prices.

STRAWBERRY-PLANTS IN JUNE AND JULY.

Yes, new plants can be furnished, but it is pretty expensive business; because, if you take off the first plant as soon as it is firmly rooted, it spoils all that is beyond it; and you have to hunt over your patch even then in order to find them sufficiently well rooted to be sent safely by mail; and, in fact, the only way to send them out so there is almost no danger at all from losses in planting during the hottest month of the year is to send potted plants; and to go by mail they need to go potted in jadoo fiber. We are now ready to fill orders for a few kinds, potted in jadoo fiber, say Nick Ohmer, Carrie, and Margaret; and we can furnish any of them in our list on ten days' notice; but we should not like to sell them at this season of the year for less than 5 cts. each, postpaid by mail. Nick Ohmer will be 10 cts. each. In the latter part of July and August we shall be able to make better prices. I suppose the friends know, of course, that a strawberry-plant put out the first of July, or a little earlier, will make a great number of plants before winter if it is properly cared for.



HIGHER PRICES ON ALL WIRE GOODS.

Owing to continued advances in the price of wire we are obliged to withdraw all prices on wire nails and wire goods, and will quote prices on application. We will try to have new lists of prices made up for next issue. In the meantime orders will be filled at the lowest price we can make, consistent with the market.

WANTED, QUEENS.

We are having an exceptionally large call for queens this season, and are not able to supply the demand; and, worse still, we are not able to get queens from the South from regular breeders as fast as we can use them. If there are others who have good untested queens to spare we wish they would send in their names *at once*, with price asked in dozen lots. Inferior queens, old queens, scrubby queens, little and black queens, we will not take at any price.

ADVANCING PRICES.

Owing to the continued advance in price of all kinds of metals, a general revision of prices of articles, composed principally of metals, will have to be made in the near future. The prices of all kinds of lumber have already advanced an average of about \$4.00 per 1000 feet, and the upward trend in prices still continues. This will make necessary a revision in prices of almost every thing in our catalog. If you are at all likely to need supplies of any kind in our catalog, you will not buy cheaper than now, but are likely to pay higher prices before another season rolls round.

A B C OF BEE CULTURE OUT OF PRINT.

The demand for this popular work has been so brisk for the past year that the edition was entirely exhausted several weeks ago. At the rate it had been selling we calculated that we should have enough to last till next fall. It is desirable to have each new edition fully up to date, and we did not begin the new edition till March, believing that would be time enough to get it completed before the old edition was sold out. A large amount of revising and reworking is needed, and the work progresses slowly. It is likely to be September before the new edition is complete. In the meantime we have orders booked for hundreds of copies, many of which are urgently needed. If any of our readers know of any books that are available we should like to get track of them. We will trade a copy of the new edition, when done, for new books of the old edition. If you have any to spare, write us; but don't send the books, as we may want them sent direct to customers and thus avoid one mailing with the necessary stamps. In this trade we should expect you to pay one postage at least. We want to accommodate those who are in urgent need of the books, and can not well wait till the new edition is completed.

How Pictures add to the Usefulness and Beauty of a Journal.

»»»»»

READING page after page of labored description often fails in giving so clear an idea as a single glance at a picture. With this idea in view the Bee-keepers' Review uses pictures whenever it can in this manner bring out ideas more clearly. Not only this, but it sometimes gives a picture, as a frontispiece, in which beauty plays no small part.

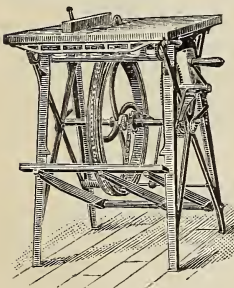
In supplying the Review with pictures there is a great advantage in the fact that its editor is an enthusiastic amateur photographer; ever ready with his camera to catch any object of interest that may appear in his apiary. If a subscriber sends him a new hive, or super, or implement, it is an easy matter for him to lay a picture of it before his readers. Not only this, but he also makes frequent trips among bee-keepers taking his camera with him, and bringing home as trophies, views of apiaries, etc., to be used in brightening the pages of the Review.

Aside from their value in making more clear the meaning of accompanying reading matter, good pictures are not only a source of pleasure to the beholder, but they exert an influence that is elevating and refining. The pictures in the Review are really an important feature.

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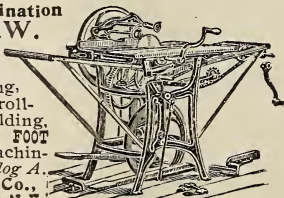
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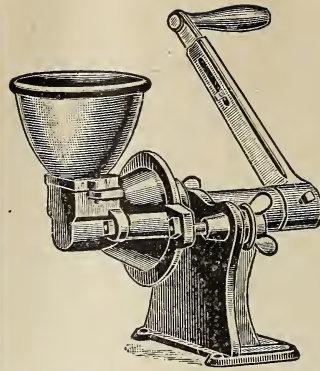
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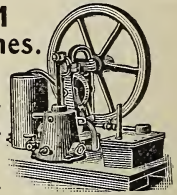
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